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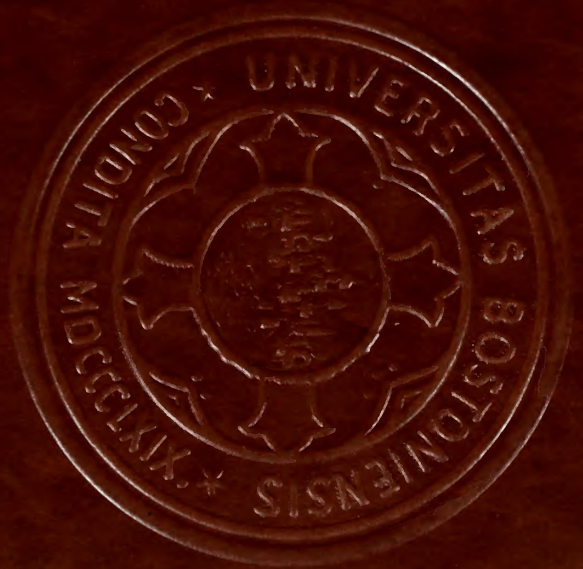

BOSTON UNIVERSITY

SCHOOL OF EDUCATION

Thesis

AN APPRAISAL OF THE REHABILITATION PROGRAM IN A MASSACHUSETTS COUNTY SANATORIUM

Submitted by

Marian Scott Nevers

(B.S. in Ed., Boston University, 1939)

In partial fulfillment of requirements for

the degree of Master of Education

1942

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CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

Nature of rehabilitation.-- The subject of rehabilitation has been one of increasing interest and importance in this country for more than thirty years. But like many other movements in social welfare, its nature and scope has not been definitely fixed or fully defined.

In the broadest sense rehabilitation of the tuberculous may be interpreted as "a process of satisfactory adjustment of the tuberculous patient to his sanatorium, home, work, and community environment."[1] This conception of the problem implies the concerted efforts of all persons and agencies who are concerned with the ultimate vocational adjustment of the handicapped individual.

Briefly with a slightly different emphasis, it is said to be "the physical restoration, the maintenance of morale, the occupational adjustment, and the social stabilization of the tuberculous patient."[2]

The complexity of the problem is indicated by still another writer who says:

1/Philip P. Jacobs, The Control of Tuberculosis in the United States, National Tuberculosis Association, New York, 1940, Ch. XIV, p. 144.

2/Terry C. Foster, "Rehabilitation and After-Care of the Tuberculous," American Review of Tuberculosis, XLIII (February, 1941), p. 276.

> Rehabilitation is composed of unequal parts of medicine, sociology, economics, industrial management, and general administration. It requires the joined efforts of trained personnel in all these fields, for our endeavors are fundamentally directed toward augmenting all the factors which tend to keep the discharged patient on the credit side of the ledger. To consolidate gains made at the sanatorium and to encourage positive healthy attitudes, planned graduated work programs or other forms of vocational training, food and shelter, an adjusted family situation, a measure of economic security, all these are needed. And through these we achieve a reduction of breakdowns and sanatorium re-admittances to a point approaching the irreducible minimum.[1]

It is a striking fact that a considerable number of patients who leave the sanatorium have definite personality difficulties. They are emotionally unstable and vocational objectives appear to be lacking.

Frequent breakdowns and subsequent readmittances to sanatoria point to the fact that far too often the patient returns to his former employment, which though familiar to him, is unsuited to his physical condition. The problem of the young person whose education has been interrupted by the disease and who has never attempted self-support has, in the past, had inadequate attention. Emphasis has been placed on the physical cure. Today the fact has been recognized that hundreds of patients, cured of tuberculosis or with arrested cases, can safely be trained for and accept employment providing the work is suitable for them.

Numerous attempts have been made in the past to provide rehabilitation for tuberculous individuals. Experience has proved that the patient's mental attitude toward hospital personnel, treatment, and training, unless controlled in the sanatorium, causes him to develop

1/Louis E. Siltzbach, "Rehabilitation of the Tuberculous," American Review of Tuberculosis, XLIV (September, 1941), p. 358.

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[1]Louis R. Elitzbeck, "Rehabilitation of the Tuberculous," American
Review of Tuberculosis, XLIV (September, 1941), p. 300.

psychological patterns which are typically institutional. Unless he is already vocationally adjusted when the disease is first discovered, the probability is that he will leave the sanatorium with inadequate vocational plans, with work habits which have become deteriorated, and with a definite need to orient himself to outside working conditions before any vocational training can be undertaken.

If, on the other hand, adequate guidance techniques and procedures have been made available to the patient while in the sanatorium, an improved attitude can reasonably be expected as well as a satisfactory vocational objective based upon physical limitation and individual need.

Evidences of the need of rehabilitation services.-- Rehabilitation programs although long recognized as highly desirable and essential, have in comparison with the need, developed slowly. While not altogether neglected, much of the work done has been vague and indefinite. The extent of the need has been effectively shown in a now well-known study made jointly by the National Tuberculosis Association and the Vocational Rehabilitation Division of the United States Office of Education, for the purpose of discovering the factors which effect the patients' survival and capacity to work, and in which the following significant facts were presented.

The study included 6906 patients discharged alive in 1933 from 75 sanatoria in 15 states. The background, treatment, and aftercare were included in the analysis.

Of the 6906 patients five years after discharge

52 percent were alive

31 percent were dead
17 percent could not be located.

On admission to the sanatoria

9 percent were under 20 years of age
42 percent were between the ages of 20-29

32 percent were between 30-45
16 percent were over 45

(note--51 percent were less than 30 years of age)

With regard to education on admission

12 percent had education of six grades or less
25 percent had education of seven to nine grades
21 percent had education of ten grades or more.

It is discouraging to find that the education of the patient on admission was not recorded in 41 percent of the cases. The educational service to them while in the sanatorium or afterwards was no less discouraging. Only fifteen percent received any kind of educational service, academic or vocational, in the sanatorium: only four percent received vocational rehabilitation after discharge.1/

As to length of stay in the sanatorium and relation to survival

45 percent were in the hospital for six months or less.
34 percent of these were dead five years later.

23 percent were in the sanatorium from six months to one year
30 percent of these were dead five years later.

20 percent were in the sanatorium for one to two years
29 percent of these were dead at the end of five years.

11 percent were in the sanatorium for more than two years
27 percent of these were dead five years later.2/

From the above figures it would appear that the longer the stay in the hospital the better chance the patient has of survival.

1/Terry C. Foster, op. cit., pp. 274-275.

2/Ibid.

70 percent of all cases were discharged with the consent of the physician
60 percent of those discharged with consent were alive five years later.
33 percent only of those who left the sanatorium against advice survived the five year period.1/

Certain deductions can be made from these figures which have a definite relationship to the aftercare of the tuberculous.

1. Rehabilitation and aftercare of the tuberculous is concerned to a large extent with young people under 30 years of age.

2. The low percentage of patients for whom educational and vocational guidance are provided indicates a definite need for such services.

3. Need for adjustment in the sanatorium is shown in order to eliminate the large percentage of discharges against advice and subsequent breakdowns and readmittances.

Turning from the National figures to the problem in Massachusetts, we find that 70 percent of the deaths after discharge occur during the first three years; a fact that indicates that in all probability this period is a crucial one.

According to the figures from eight sanatoria in Massachusetts which participated in the National study about 38 percent of patients discharged alive from these sanatoria were discharged against the advice of the physician, and an estimated 53 percent in the age group 25-35 left without consent. Evidence is shown that the need for adjustment to treatment is a pertinent factor.

It is shown that those patients discharged from the sanatorium against advice have a death rate three times higher than those who

1/Ibid.

leave with the permission of the physician. There is, therefore, a definite correlation between length of stay in the sanatorium and maintenance of cure, and not only is adjustment in the sanatorium related to survival itself, but it is concerned with the problem after discharge.

Before 1939, approximately 25 percent of persons who left the sanatorium were self-supporting during the first five years after discharge, and readmittances during this period were high.

Approximately 27 percent of patients discharged from tuberculosis hospitals in Massachusetts die during the first five years after discharge. In the age group 16-25 about 29 percent die within six months after they leave the sanatorium.

Usually about 50 percent of patients in sanatoria are under 30 years of age. This means that their need for rehabilitation is maximum in terms of age groups, economics, and mortality.

The significance of the above figures is self-evident. Rehabilitation services must be recognized as an integral part of society's care of the tuberculous. No longer is the problem one of placing the responsibility for rehabilitation; rather the problem is now one of discovering ways and means of discharging the responsibility in local communities and individual sanatoria.

Objectives of rehabilitation programs in sanatoria.-- In general it may be said that the objectives of a rehabilitation service in sanatoria are threefold: "(1) to help the patient while in the sanatorium to establish new interests and to complete or supplement

his basic education; (2) when indicated, to start him on a course of training to fit him for the work he plans to take up after discharge; (3) to assist him in readjustment to his job or in securing work in new fields."[1]

The goal which a rehabilitation program should accomplish from the viewpoint of public health includes at least five desirable achievements.

1. A reduction of discharges from the sanatorium without the advice of the physician.

2. Reduction of readmittances following a physical breakdown.

3. A decrease in the death rate after discharge.

4. An increase in the ability of the patient to be self-supporting.

5. Adequate adjustment in the sanatorium until a reasonable work tolerance is attained.

"The goal of all these programs is the treatment not of the damaged lungs alone, but of the whole human being, to the end that each discharged sanatorium patient may take that place in society where he may find the greatest happiness while he makes his own unique contribution to the general welfare of all."[2]

Nature and Scope of the Problem

The effect in Massachusetts of the study referred to has been to give a definite impetus to the program of general adjustment for

1/Elna I. Perkins, "More Realistic Tuberculosis Education," The Commonhealth, Massachusetts Department of Public Health, XXIX (January-February-March, 1942), p. 25.

2/Beulah W. Burhoe, "Launching a National Project," Occupations, XV (April, 1937), p. 592.

the sanatorium patient. No comprehensive study has been made, however, of the status of rehabilitation services in Massachusetts sanatoria. Because the development of the work has been limited, the need for such a survey, in all probability, has not been fully appreciated.

In the light of future progress, it seems desirable to recognize what has already been done and to proceed from this point to demonstrate the need for the extension of essential adjustment services to every Massachusetts sanatorium, and to maintain as an objective the provision of a comprehensive guidance program for every tuberculous individual in the Commonwealth who needs it.

Ideally, the various adjustment services which are now in existence in Massachusetts sanatoria, rehabilitation programs, whether organized or on an incidental basis, should be studied and appraised for whatever values are inherent in them. If further investigations into the needs of patients in each sanatorium were to be undertaken, they would, beyond a doubt, indicate the importance and urgency of extending their present services through the adoption of such activities as have demonstrated their value in pioneering sanatoria with coordinated programs.

Such a study, as has been noted, has not been made. Even though the cooperation of various sanatorium directors was assured, an extensive study of this kind would involve considerable cost in time and money. A preliminary inquiry, however, has revealed that rehabilitation programs of an <u>organized</u> nature have been initiated in but two County sanatoria in the State. It is therefore proposed that a survey

be made of the rehabilitation services in one sanatorium in the state, selected because of the advanced nature of its program. The purposes of the study are:

1. To describe the existing rehabilitation program in this institution and to analyze factors which contribute to the development of the work.

2. On the basis of rehabilitation needs discovered, to determine the adequacy of the present program.

3. To recommend the initiation and development of those procedures and techniques which, in the light of best practice, might lead to the establishment of a comprehensive rehabilitation service within the sanatorium, and in so far as patient needs are similar, serve as a pattern for the introduction of like services in other sanatoria.

4. To further evaluate the total program by describing certain cases which have been the recipients of the various rehabilitation services in this sanatorium and to point out methods by which a rehabilitation service, cooperating with all other services in the sanatorium, operates in assisting individuals to become self-supporting and useful citizens despite the handicap of tuberculosis.

Procedure

The appraisal of the program at Middlesex County Sanatorium, with which this study is concerned, was undertaken with the endorsement of the Superintendent of this institution. His interest and cooperation made it possible to interview heads of departments who furnished data and information regarding the present program and future plans. The

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Executive Secretary of the Southern Middlesex Health Association graciously allowed the use of records and office space for tabulating material. The Rehabilitation Secretary gave generously of her time for interpreting records, and added valuable information from her experience with patients at the sanatorium.

The sanatorium chosen is representative in size and in the type of individual served. It has been outstanding in its endeavor to meet the individual needs presented by each patient, physically, educationally, and vocationally. Its services are coordinated to include the patient's total adjustment. While the first consideration is the restoration of the health of the patient, it has not overlooked the fact that it has a responsibility beyond that of physical cure. A six way program exists within the sanatorium which includes social service, occupational therapy, adult education, prevocational training, a library service, vocational counseling, and placement service. The vocational counseling and placement services are provided at present by the Southern Middlesex Health Association, a voluntary organization which furnishes the services of a full time trained worker. The present interrelated services culminating in a weekly conference for the purpose of studying the individual patient and his needs, offers an unusual opportunity for description and appraisal in terms of total adjustment and the return of the individual to his rightful place in society.

In the succeeding chapter which presents a preliminary description of the rehabilitation program, the present organization and administration of the rehabilitation services in Middlesex County Sanatorium

will be described, and the way in which they function within the sanatorium shown; data concerning the patient population will be presented and analyzed to determine the value and need of organized rehabilitation programs in hospitals for the tuberculous.

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CHAPTER II

PRELIMINARY DESCRIPTION OF THE REHABILITATION PROGRAM

Function of a voluntary tuberculosis association.-- It has long been the policy of the National Tuberculosis Association and its affiliated State and County Associations to demonstrate new needs and procedures that official agencies are unable to undertake. It is often exceedingly difficult for tax-supported agencies to use public funds for experimentation and demonstration.

> The non-official agency, on the other hand, is in a better position to accept new procedures as experimental and may procede to demonstrate for itself and for the community their relative value or lack of value, or it may by experimental work evolve a new procedure....
>
> The non-official agency moves with greater speed than the slowly revolving wheels of state and local legislative bodies. In this way the non-official agency fills a definite gap between the tested practice as demonstrated in the laboratory or field and the ability of the health department or other official agency to accept or adopt such practice. Since in connection with both medical and social aspects of the tuberculosis problem, new ideas are constantly being developed, demonstration and experimentation offer the non-official association an almost limitless opportunity for service. 1/

Voluntary organizations in Massachusetts, in line with this policy have made it a practice to complement and supplement services provided by tax funds when the necessity arises.

Frequently, for an immediate need, the temporary employment of a particularly trained person by a voluntary association is essential

1/Philip P. Jacobs, op. cit., pp. 219-220.

when no appropriation is available from the official agency or when that agency has not recognized a need. Such a need was recognized and met by the Southern Middlesex Health Association which, in August, 1940, appointed to its staff as rehabilitation secretary a person with a broad background of training and experience to initiate a program of rehabilitation in cooperation with the Middlesex County Sanatorium.

Qualifications of professional rehabilitation workers.-- The success of individual rehabilitation depends largely on a detailed and objective study of the individual patient and the choice of appropriate educational and occupational objectives by him. It is, therefore, of the greatest importance that the quality of guidance to be provided handicapped people be assured through the provision of qualified guidance functionaries. Finch stresses the importance of accurate diagnoses for guidance purposes as follows:

> In the past, vocational rehabilitation practice has in most instances apparently given major emphasis to methods of vocational training and placement, while planning based upon modern techniques for individual diagnosis has received relatively limited attention. Advocacy of the use of such guidance techniques in no way minimizes the importance of training and placement in rehabilitation. Instead, the justification for better guidance--guidance that recognizes the quality of physique, intellect, interest, and personality peculiar to each individual--is to be found in part in the fact that such guidance may play an important role in solving for the handicapped individual the difficult problem of finding suitable employment. Finally, since it enables him to become a more effective worker, it may contribute in some degree to his security after he is on the job.1/

Before reviewing the qualifications of the rehabilitation secretary's appointed work with the Middlesex County Sanatorium, to make

1/F. H. Finch, "Qualifications for Rehabilitation Counselors," Occupations, XV (April, 1937), p. 628.

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[1] H. Finch, "Qualifications for Rehabilitation Counselors," Occupations, XV (April, 1937), p. 650.

individual diagnoses and render other essential guidance services, the following statement of qualifications adopted by the Minnesota State Board of Vocational Education and listed as the minimum qualifications for directors of rehabilitation programs, may be examined:

Education: Graduation from an accredited university or college plus a Master's degree based on advanced university study in (1) vocational guidance, personnel psychology, and other courses dealing with individual diagnosis, or (2) a combination of courses in education and social welfare supplemented by courses from the fields listed in (1) above.

Experience: A total of five years paid full time recent employment in vocational rehabilitation, educational and vocational guidance, employment or personnel work, and related activities which require individual diagnosis, at least two of which include administrative or supervisory responsibility. Also experience in planning and prosecuting research dealing with educational, or related problems. Graduate training beyond the minimum in the above fields may be substituted for experience year for year.

Added Desirable Qualifications

Education: Graduate training in as many as possible of the following specific fields: tests and measurements--group and individual, educational and vocational: statistical methods; industrial or personnel psychology; abnormal psychology; vocational psychology; social psychology; social case work; personnel administration; occupational studies and job analysis; labor problems.

Special knowledge: Knowledge of various types of jobs, and occupational information based on job studies; knowledge of academic and vocational training agencies; knowledge of public and community agencies such as employment service, health agencies, social agencies, psychiatric clinics; knowledge of workmen's compensation administration and labor legislation; knowledge of special problems of the handicapped.

Experience: Administrative, supervisory or other experience in as many as possible of the following fields: vocational and educational guidance, vocational and general education, personnel work, psychometrics, clinical psychology, and industry. 1/

1/ Ibid., pp. 629-630.

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work, psychometrics, clinical psychology, and industry.[1]

[1] Ibid., pp. 829-830.

The worker who was chosen as Rehabilitation Secretary by the Southern Middlesex Health Association rates high with respect to the requirements as outlined above and in addition possesses a number of the added desirable qualifications. She is attractive in appearance, has a keen understanding and appreciation of the problems of tuberculous patients, and immediately inspires the confidence of those with whom she works.

Her educational preparation consists of four years at the University of Wisconsin where she majored in labor and economics, receiving a Bachelor of Science degree. Her related minor was in the field of psychology. She had some graduate work in guidance at New York University.

Working full time for two summers and part time for three school years in the employment service of the University of Wisconsin, she gained experience in interviewing and placement. Following her graduation from the University she took a position in the office of the Dean of Women and had further opportunity for work in the field of guidance. As a member for three years of the staff of the Wisconsin Anti-Tuberculosis Association and for one year on the staff of the National Tuberculosis Association, she became familiar with the adjustment problem of the tuberculous and the educational and vocational guidance techniques as applied to that particular group.

This worker spent a year and a half before entering college in a sanatorium as a patient and therefore possesses an unusual knowledge of the problem which confronts handicapped people.

Development of the program.-- In establishing a rehabilitation program a certain amount of groundwork is necessary. The procedure for working out the program is the joint responsibility not only of the hospital staff but of all community agencies, local and State vocational organizations, industries, and in this particular situation the local Christmas Seal Sale committees, whose aid in providing financial assistance is necessary. In other words the worker, assuming responsibility for developing effective services, must know her community and its resources. She must also familiarize herself with the resources which the State offers. There is in Massachusetts, as in most States, a Division of Rehabilitation with money available for the training of physically handicapped people. This organization, official in nature, works closely with official and nonofficial groups and in many instances furnishes funds for the vocational training of patients.

In developing the program at Middlesex County Sanatorium attention was first centered on a general survey of the community served by the Sanatorium. Social and educational agencies were visited by the rehabilitation secretary and contacts made with vocational schools. Vocational teachers and placement workers were interviewed in order to obtain information about courses. Contacts were also made with industries for the purpose of acquiring a knowledge of policies concerning the employment of individuals with a history of tuberculosis.

A tentative immediate plan was formulated for the initiation of rehabilitation services by the new rehabilitation secretary when she took office. The general procedure is summarized as follows:

I. Coordination of the existing facilities in the Sanatorium: social service, occupational therapy, library, adult education, and nursing (to be described in detail in Chapter III).

A. Formulation of a rehabilitation record (see Appendix).

B. Interview, with adult education worker, all patients in the Sanatorium recommended by the hospital physician as having a good physical prognosis for the purpose of becoming acquainted with their interests and needs.

C. Work out with the social worker, occupational therapist, librarian, and adult education worker, a program of study and/or work for each patient interviewed.

II. Organization of a rehabilitation clinic.

A. Plan a weekly meeting with members of the hospital staff who are concerned with the rehabilitation of the patient, to consider the patient's adjustment problems within the Sanatorium and to anticipate his discharge program.

III. Study all cases with good physical prognosis.

A. Clear cases with other local agencies to determine past assistance and future work possibilities.

B. Select most suitable cases and work out aftercare programs.

C. Select a group in one community to experiment with training in general home economics, nutrition, and parent education. This group could be taken from housewives discharged from the Sanatorium.

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With the exception of the experiment with housewives, the threefold program outlined above has been initiated and is at present in various stages of development.

In closing this chapter, mention should be made of several other factors which are involved in the total adjustment of the patient. The importance of patient morale which must be maintained is the concern of every individual who works with the patient in any capacity. Hope of recovery and subsequent economic security give him courage for the future which is important for complete restoration to health. Vocational placement, while highly significant, is by no means the ultimate solution to every patient's problem. Satisfactory adjustment to whatever the future holds for the individual is the goal of the rehabilitation program. This may mean full-time employment, work under sheltered conditions, or merely interesting hobbies as may be the need in chronic cases. It is the role of the rehabilitation worker to assist each patient as an individual. No one program for all patients is ever feasible or possible.

The existing services within the Middlesex Sanatorium, intended to contribute to the all around educational and occupational adjustment of the patient are described in the following order in Chapter III: (1) social service, (2) occupational therapy, (3) library service, (4) adult education, (5) vocational counseling, and (6) employment service.

CHAPTER III

REHABILITATION SERVICES IN THE MIDDLESEX COUNTY SANATORIUM

Physical Plant and Medical Personnel

Middlesex County Sanatorium is situated on the outskirts of Waltham, Massachusetts. It is easily accessible and its ideal location provides a considerable elevation and an abundance of fresh air and sunshine. It is tax-supported by towns which fall into the so-called Middlesex County Tuberculosis Hospital District.

The hospital was founded in 1931. A large airy building, four stories high, comprises the main part of the Sanatorium. Recently two wings have been added which are connected with the original hospital by a well-built tunnel. The hospital has a capacity for the care of 400 patients, with a daily average of 347 during 1941. It has a large outpatient department and diagnostic clinic, six extramural clinics, and is adequately equipped to care for tuberculous individuals.

The resident staff consists of a superintendent, an assistant superintendent, and seven full-time physicians. Each resident physician has a service of approximately fifty patients. The consulting staff includes a roentgenologist, an obstetrician, a laryngologist, a dermatologist and syphilologist, two internists, two anesthetists, an oculist, a general and thoracic surgeon, an assistant surgeon, a dentist, two pathologists, and a neurologist and psychiatrist.

In addition to the medical staff there is a nursing staff of 27 graduate nurses including a superintendent of nurses, an assistant superintendent of nurses, an operating room supervisor, and a night supervisor. Supplementing these are 32 attendant nurses and 10 nurses' aids.

Medical Social Service

A most important service rendered to the patients of the hospital is that of medical social service. Middlesex County Sanatorium has on its staff a trained and experienced social worker. A graduate of Simmons College School for Social Work and with several years of experience, she is adequately prepared to meet the needs of the individual patient.

Medical social service involves "a service to the patient, the physician, the hospital administrator, and the community, in order to help meet the problems of the patient whose medical need may be aggravated by social factors, and who may therefore, require social treatment which is based upon medical condition and care."[1/]

Specific problems which must be faced in tuberculosis include the cost of care and loss of income over a year or several years. The usual way of life is interrupted, separation from the family, and sometimes permanent handicaps are involved. Fears and anxieties occur which may obstruct the cure of the disease.

The service of the medical social worker is important during four specific periods.

1/"Statement of Standards," adopted in 1936, American Association of Medical Social Workers.

First, at the time when the diagnosis is made and sanatorium care recommended, she may be called in to help the patient face the implications of diagnosis and offer assistance with personal and family adjustments.

Second, after the patient is in the sanatorium she may help bridge the gap between him and his family, helping to maintain and strengthen family ties through her contact with the home and with the patient in the sanatorium, and calling upon the resources of the community as needed to relieve the family situation.

Third, later she has a part to play in the rehabilitation plans. As part of the medical team, with the physician she can help decide who is ready and who is not, socially and emotionally, to consider rehabilitation.

Fourth, the medical social worker assists with plans for discharge and after care and with the social problems of readjustment to family and community life. Here, as in the sanatorium period, cooperation with the rehabilitation worker will be particularly close especially in the case where the patient is known to both workers.[1]

In Middlesex County Sanatorium the medical social worker has an added duty, that of assisting in the outpatient clinic, a service which consumes a great deal of her time. Here patients are interviewed when they come for examination and X ray. The individuals who visit the outpatient clinic are all known to the social worker and it is here in many cases her actual work with the patient and his problem begins. She also makes an effort at the time the patient is admitted to the hospital to have all who have come in contact with the patient in his home or place of employment examined.

Occupational Therapy

Occupational therapy involves any mental or physical activity which may aid in or lead to the cure of injury or disease. While it

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1/Helen J. Almy, "Needs of Medical Social Service in Tuberculosis Sanatoria," The Massachusetts Health Journal, XXII (October-November-December, 1941), p. 3.

helps the patient to enjoy beneficial activity during treatment, this may be the smallest aspect of therapy. Other aspects may include counseling, education, and the stimulation of interests. Group work practices are sometimes feasible such as the development of a sanatorium newspaper, recreational activities, games, movies, and radio programs. Skills and crafts may be developed which may be transferred later to gainful occupations.

The treatment of tuberculosis is largely bed rest. Patients must remain in bed for months and sometimes years. Inactivity irks them. They may find it difficult to sleep. They worry about their families and their own physical condition. Occupational therapy has proved its value in helping the patient to adjust to the sanatorium situation. In keeping him occupied and more contented many personality problems may thereby be lessened. The program is useful as a means of social diagnosis and prognosis. The occupational therapist has a distinct advantage in that she works with the patient constantly, and usually over a long period of time. Opportunity is thus given to observe the patient's various attitudes and reactions.

On the basis of known facts and because it was felt that occupational therapy should not be practiced on a hit or miss basis, an occupational research study was made in 1941, by the Southern Middlesex Health Association in cooperation with the Massachusetts Tuberculosis League and the Boston School of Occupational Therapy. The study was designed to measure the activity interests of individual patients. An occupational therapy interest record was developed

(see Appendix), each patient asked to check his likes and dislikes, and his preference for certain activities was determined. More specifically the occupational therapist was able to ascertain

1. What activity the patient likes.
2. What activity interests the patient.
3. What activity arouses the patient's curiosity.
4. What activity causes indifference.
5. What activity is disliked by the patient.

Not only can a simple interest be detected by such an analysis, but more important, a pattern of the individual's interest is found. Since a permanent record is kept for each patient the occupational therapist can analyze the direction and study the stages of interests to a point where they are recognized by the patient.

The occupational therapist at Middlesex County Hospital has been guided by the individual records in initiating her program. A study of the stated interests of the patient has proved of value in her preliminary interview since in her approach to the patient she has a general idea of what he likes to do and can suggest projects which are in line with his physical capacity.

Occupational therapy has been carried on at Middlesex County Sanatorium for several years. The work has principally consisted of various types of craft work which have been offered on an unorganized basis to patients who expressed an interest. The present worker has been on the staff only five months and her program is not wholly developed. She is a graduate of the Boston School of Occupational

Therapy, and has had a wide and varied experience in this field, both in this country and abroad. She is also a graduate nurse and has a keen understanding of the physical limitations of tuberculous patients. Her work is varied and emphasis at present is being placed on the bed patients, and activities are undertaken which involve only the use of the arms below the elbow. She works very closely with the physician and only with patients for whom the physician has given specific recommendations as to type and amount of activity.

As part of the program a well-equipped shop is provided for ambulatory patients where work in silver, leather, bookbinding, and other similar projects are taught.

Ambulatory patients are allowed to play bridge twice a week and the occupational therapist supervises this and other forms of entertainment.

An unique activity which has recently been inaugurated is the music program, which has been made possible by the installation of a broadcasting system. The occupational therapist has enlisted patient participation, and a music committee composed of patients who are usually receiving bed treatment, or who are on light exercise, chooses and times records and prepares a half hour program for broadcasting twice a week. Classical or semi-classical music only is played and any patient who wishes may listen. The occupational therapist is particularly interested in increasing the use of the broadcasting system to include lectures on educational subjects.

Occupational therapy services are at present reaching about 60

percent of the patient population. With additional personnel it could reach more. There are, however, patients whose physical condition prohibits any form of activity and those who are able to undertake educational and pre-vocational courses concentrate on these activities.

Occupational therapy is a guidance measure which should be directed toward vocational objectives if possible. It relates directly to the total rehabilitation service, and by creating interests and diversions for the patient during his long convalescence it contributes toward a decrease in the number of persons who leave the hospital against the advice of the physician.

Library Service

Shortly after the Sanatorium was built a library service was started. Some books were donated and many were purchased with money gifts to the hospital. A trained librarian was engaged to make weekly visits to the institution and a schedule was initiated that made it possible for her to see each patient every other week. This was obviously inadequate and later two visits a week were made and each patient was seen once a week. As the patient population became larger the librarian came four times a week and was finally placed on full time. Books were at first purchased once a year and as many bought as funds would allow. The librarian continued to visit the patients with a book cart and provision was made for ambulatory patients to visit the library where complete catalogues are furnished and distributed to bed patients in order that they may select the type of book they wish.

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The present librarian is a graduate of Simmons College and a full-time member of the staff. Her training has been wholly in library work.

There has been a gratifying increase in volume and in circulation of books. The library now is well-catalogued and has more than 4,000 books covering practically all fields and including many textbooks for those who are taking courses. Ten new books are purchased each month by the librarian, who bases her selection on the patients' library record which is described below. New books are placed in a rental library for employees for one month and the proceeds are used toward the purchase of more new books.

The patient library as well as the occupational therapy service is part of a well-rounded rehabilitation program. The librarian reports that such a service may reach as many as 90 percent of the patients. It provides intellectual and cultural activity for those who do not like to work with their hands. It may meet a need for those who, for medical reasons, are deprived of occupational therapy. It has been found helpful for new patients and those who are undergoing surgical treatment. While this service reaches a group who are non-prospects for immediate vocational training, it is exceedingly important in that it supplies textbooks and supplementary reading for those whose vocational objectives on discharge are well-planned. Such a service can help the patient meet his problem of adjustment while undergoing treatment and facilitate his subsequent cure.

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The Middlesex County Sanatorium recognized the need and realized

the importance of meeting the reading problem of the individual. In cooperation with the Massachusetts Tuberculosis League which had after several months of research, devised an instrument by which the patient's reading interests could be ascertained, a survey of reading interests of 80 percent of the Sanatorium population was made. A reading interest blank was checked by the patients. The blank was in the form of a check list on which likes and dislikes could be noted (see Appendix). From the checked lists a general reading interest can be recognized. Reading charts were made for each patient, one set for men and one for women, so that a yearly record of reading accomplishments can be filed. These charts are now systematically kept, and the librarian records the patient's selection of books each time she makes a visit. His expressed interests can then be compared with what he actually reads. The charts serve also as a counseling device for the rehabilitation worker, the educational worker, and the occupational therapist and they also help in the selection of new books.

A hospital library has great therapeutic value for the patient. While it is important that books be circulated and that patients have an opportunity to use the library freely as a diversion, its significance in connection with the educational and vocational aspects of the program should not be overlooked. A library has proved of inestimable value for the many patients for whom no other sanatorium adjustment service is possible.

At the present time there is no reading room for ambulatory patients. The hospital is looking forward to the addition of space

which will include a room where these people may go and select their books from the shelves and comfortably remain to read or study during the time they are allowed to be up and about.

Adult Education

A program of adult education helps the patient to look upon his long confinement in the sanatorium as an opportunity to develop intellectual potentialities and to prepare for training which will enable him to become self-supporting when he leaves the hospital. In order that Middlesex County patients may be assisted in preparing for some type of work a full time teacher has been assigned to the adult education service. She graduated from Lowell State Normal School and has had several years of experience including special work with subnormal children. The work of the teacher is carried on in close cooperation with the medical service. A complete list of patients is furnished. This list is screened by the physician and those who are physically able to carry on educational work are placed on the teacher's service.

Her work is primarily concerned with the completion of school courses which have been interrupted by the patient's illness, and with the supervision of University Extension courses offered without charge to patients in tuberculosis sanatoria. Unless the individual has lost too much work to make continuance feasible, contact is made with the high school in the town from which the patient comes, and work assignments are given, and are supervised by the teacher. In many cases high school diplomas are granted.

The courses which are chosen from those offered by the Division

of University Extension represent both cultural and educational fields. The teacher works closely with the rehabilitation worker, the librarian, and the occupational therapist, and whenever possible, courses are directed toward a vocational objective which is determined by counseling and if necessary, psychometric testing.

A great deal of time is spent with bed patients. Cases differ considerably, but usually some type of work is indicated within two or three months after the patient is admitted. Increase in the amount of work to be carried on is determined by the physician. Constant care is taken to prevent overwork. Patients who do not complete their work are encouraged to pursue it after discharge. Complete records are kept of the patient's past educational experiences, of the courses undertaken and courses completed while in the Sanatorium, and of the progress made.

Vocational Counseling and Employment Service

The vocational counseling and employment service as has been stated is carried on by a trained rehabilitation worker supplied to the hospital by the Southern Middlesex Health Association on a demonstration basis. The service has been in operation about two years.

The Southern Middlesex Health Association is a voluntary organization supported entirely by the sale of Christmas seals. Its function in the County is that of prevention and control of tuberculosis. It works in close cooperation with official agencies in the County in a program of adult and child health education and tuberculosis case finding. A summer health camp is also maintained where children

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who are predisposed to tuberculosis and who have come in contact with the disease are cared for eight weeks during the summer.

In August, 1941, this Association organized a rehabilitation service, and with the assurance of full cooperation of the Middlesex County Sanatorium. By January, 1941, the program was functioning. A detailed description, analysis, and evaluation of the program to show how it operates within the Sanatorium and with the discharged patient will be given in chapters which are to follow.

Rehabilitation Clinic

In April, 1941, a rehabilitation clinic was started for the purpose of coordinating the related services within the Sanatorium. It was felt that combined information from all workers would facilitate the making of suitable plans for the future of the patients. The medical director, social worker, occupational therapist, librarian, educational worker, and rehabilitation worker participated in the conferences which were held twice each month.

At the end of a year the clinic was evaluated, and certain changes were recommended. The patient's physician was included in the conference and it was decided to hold the meetings weekly. Another change involved the classification of patients on admission into groups for future reference. Patients who receive library service are now placed in Class I. In Class II the emphasis is laid on occupational therapy. Class III receives educational and pre-vocational training, and Class IV includes patients who are unable physically to receive any supplementary service. Transfer from one service to another as physical

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condition permits, is often necessary. The groups are closely related.

The rehabilitation clinic is in reality the backbone of the entire rehabilitation program. The procedure is fairly routine. Usually three patients are selected for discussion each week. Each participant comes to the clinic with his or her full records, and keeps accurate notes on blanks provided for this purpose. The medical director, who has previously reviewed the medical record, acts as chairman and opens the discussion. The patient's own physician reports on the physical condition and progress, and indicates the general type or classification of activity which may be undertaken.

The rehabilitation worker is called next. She reports on recent interviews, and states the patient's educational background, interests, and test results. She also discusses the possibilities for obtaining scholarships for tuition, when needed, from seal sale funds and from the State Department of Rehabilitation.

The social worker reports on the family situation and related problems. She is concerned with the economic and social conditions which may influence the choice of procedure. The patient may come from a home where the possibility of carrying on further study or training is unfavorable, due to crowded living conditions or for financial reasons. It may be necessary for the patient to contribute to the support of a family as soon as his health will permit, and in this event the problem is one of placement rather than of study or training. These and other facts known to the social worker contribute to the general understanding of the patient and his problem.

The contribution of the educational worker is then considered. She informs the group of the individual's progress in school work or with University Extension courses. She reports upon the quality of work, the diligence with which the work has been carried on, and the general attitude displayed by the patient. Frequently suggestions are needed as to new procedure or a new type of work directed toward a vocational objective. She may have noted a new interest. She may also have perceived an adjustment factor or problem, since she works closely with the patient and has an opportunity to observe his reactions.

The occupational therapist's report is valuable in that she too has an opportunity to observe his reactions.

The occupational therapist's report is valuable in that she too has an opportunity to observe the patient closely. She notes how consistently the individual works; the type of work which interests him most; and how skillfully he works with his hands. She observes the patient's work tolerance. Much valuable information is gleaned through her informal contacts with the patient.

The hospital librarian speaks of what the patient reads. Her individual report, which shows a graphic pattern of his reading interests, is helpful in determining a future plan for the patient, particularly if a choice of books over a period of time indicates a consistent interest along a particular line.

Each member of the conference contributes his knowledge of the patient as a person; as an individual whose future health and satisfactory adjustment after discharge is dependent on wise and careful

guidance. A total rehabilitation plan is then worked out for and with the patient. Changes will occur and adjustments will need to be made. The case is reviewed from time to time. The entire staff contributes toward the in-sanatorium adjustment. The rehabilitation worker keeps in constant touch with the patient, during treatment, and in the meantime is arranging for further study or vocational training and placement when he is finally discharged.

The conference which has been described probably best illustrates the fact that no one individual or group within the Sanatorium is adequate for the total rehabilitation of the patient; but that his return to society, physically and mentally restored to health, and equipped to earn his livelihood, is the joint responsibility of all interrelated services.

CHAPTER IV

PERSONAL FACTORS IN THE REHABILITATION OF THE TUBERCULOUS AT MIDDLESEX COUNTY SANATORIUM

When the rehabilitation program was initiated in the Middlesex County Sanatorium the rehabilitation worker conferred with hospital physicians, and through a screening process, based upon physical prognosis, she was provided with a list of patients who seemed to be reasonably hopeful material for vocational rehabilitation. This list comprised approximately 40 percent of the total Sanatorium population which at that time numbered about 375 patients.

During succeeding months changes occurred, but on March 1, 1942, at the time this study was begun, the completed records of 155 patients then enrolled in some phase of the rehabilitation program, were available for analysis. Supplementary information, such as letters from patients who were preparing for occupations outside the sanatorium or who had been placed in employment, school marks for those who were receiving training, and progress reports obtained from employers, were included in the record folder. Each patient had benefited from one or more of the services described in the previous chapter.

The record used by the rehabilitation worker is a printed folder (see Appendix) and gives detailed information concerning the patient under four headings; namely, personal, physical, education and training,

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During succeeding months changes occurred, but on March 1, 1942, at the time this study was begun, the completed records of 186 patients then enrolled in some phase of the rehabilitation program, were available for analysis. Supplementary information, such as letters from patients who were preparing for occupations outside the sanatorium or who had been placed in employment, school marks for those who were receiving training, and progress reports obtained from employers, were included in the record folder. Each patient had benefited from one or more of the services described in the previous chapter.

The record used by the rehabilitation worker is a printed folder (see Appendix) and gives detailed information concerning the patient under four headings; namely, personal, physical, education and training,

and occupational history.

The statistical and other information included in the analysis was taken from the 155 records and was tabulated by using an improvised checking system. Supplementary information was obtained from interviews with the rehabilitation worker.

The rehabilitation worker has classified the 155 patients into activity groups which are described as follows:

Group I. Patients who have been interviewed and who are considered good prospects for rehabilitation. The majority of these people are still in the Sanatorium, and are receiving some type of pre-vocational training or are engaged in occupational therapy; a small proportion have been discharged and are waiting to be placed in training schools or in some occupation.

Group II. Patients who are receiving some type of vocational training or who have completed training and are waiting to be placed.

Group III. Patients who have been satisfactorily placed in occupations either directly or on the completion of specific training.

Group IV. Patients who have been interviewed and have, for the present, been rejected as unsuitable or in no need of rehabilitation service.

From time to time changes take place in the grouping of patients. It is expected that individuals who are now in Group I will, in all

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Table 1. Distribution of 155 Tuberculous Patients According to Activity Groups.

Group	Number of Patients	Percent
I	84	53.7
II	19	12.1
III	20	12.8
IV	32	20.4
Total	155	

probability, be later included in Group II. As training is completed those in Group II will be placed in suitable positions and transferred to Group III. Patients in Group III will be followed until the evidence of their satisfactory adjustment and economic security is assured. Those who are now in Group IV include housewives who will return to their homes, a few individuals who are economically secure without need for employment or any form of adjustment, and those who can go back to their former occupation which has been approved by the physician in charge. The University Extension courses, educational and cultural in nature, occupational therapy, and the library program are available to them.

For the purpose of this study the patients will be referred to as Group I, II, III, and IV respectively. Descriptive material will be classified under four categories: personal, physical, educational and vocational, and occupational history. Data is shown and tabulated for the purpose of indicating important factors concerning the four classifications and to point to their significance for guidance.

Significance of age.-- Of the 155 patients studied it is significant to note (Table 2) that ninety-nine, or 63.3 percent, are under

Table 1. Distribution of 150 Tuberculous Patients according to Activity Groups.

Group	Number of Patients	Percent
I	84	56.7
II	18	12.1
III	20	13.3
IV	28	18.9
Total	150	

Table 2. Age Distribution of 155 Tuberculous Patients.

Age in Years	Number of Patients	Percent
15-19	9	5.7
20-29	90	57.6
30-39	43	27.5
40-	13	8.3
Total	155	

30 years of age. Forty-three, or 27.5 percent, are between 30 and 40.

Experts in the field of tuberculosis have stated and research has determined that tuberculosis is a disease of young people.

> Tuberculosis has been characterized as "the foe of youth". Half the victims of this disease are young people. About one out of every four young women who die during the period between 15 and 30 falls a victim to tuberculosis. Among men at no period of life do tuberculosis deaths quite reach this astounding proportion, although in the years between 20-25, one out of every six deaths is caused by tuberculosis.[1]

The figures in Table 2 indicate that the group selected for study conform to the general findings in that the majority of patients are under 30 years of age.

Workers in the field of general guidance have long since recognized the importance of diagnosing and meeting the mental, emotional, and vocational needs of young people before maladjustments occur. The young person, faced with the lifelong handicap that tuberculosis imposes, to which he must adjust, presents an added challenge. Since the larger number of persons studied fall into this critical age group, the rehabilitation worker is presented with a broad opportunity and given a tremendous responsibility for providing effective guidance

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service for these individuals. At this period of their lives much can be done to assist them, and as a result prevent, to a large extent, maladjustments later on in life.

Table 3. Age Distribution of 155 Tuberculous Patients by Activity Groups.

Age in Years	Group I		Group II		Group III		Group IV		Total
	No. of Patients	Per-cent	No. of Patients	Per-cent	No. of Patients	Per-cent	No. of Patients	Per-cent	
15-19	6	7.1	2	10.9	1	5.0	0		9
20-29	54	64.2	15	78.9	11	55.0	10	31.2	90
30-39	18	21.6	1	5.2	7	35.0	17	53.1	43
40-	6	7.1	1	5.2	1	5.0	5	15.6	13
Total	84		19		20		32		155

Table 3 shows the age distribution of 155 patients studied by groups. Sixty persons or 71.3 percent of the eighty-four individuals in Group I, who are being prepared for some type of work, are under 30. Those who are in the Sanatorium are either doing constructive occupational therapy with a definite purpose related to future plans, or are taking University Extension courses having in view further training for a specific occupation when discharged.

In Group II, seventeen or 88.8 percent of the total number are under 30. Apparently as age increases beyond 30 the interest of patients in general, in preparing for new work, decreases.

Figures in Group III show that twelve or 60 percent of the twenty patients who now have satisfactory employment are between 15 and 30. It should be kept in mind that in this group there is a small number

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15-19	8	7.1	2	10.5	1	5.0	0		3
20-29	64	64.6	15	78.9	11	55.0	10	31.2	30
30-39	18	31.6	1	5.2	7	35.0	17	53.1	43
40-	6	7.1	1	5.2	1	5.0	5	15.4	13
Total	84		19		20		32		150

of persons who did not need training and were placed directly as soon as physical condition permitted.

Mental and emotional adjustment.-- While it is generally conceded that there are distinct and definite mental aspects related to the tuberculous, and that mental therapy plays an important part in the cure of the patient, few studies have been made which indicate conclusively the extent of the problem. Evidence that the age group 25-35 presents the greatest difficulty in adjusting to treatment and to the sanatorium situation, is shown in the study made of Massachusetts sanatoria referred to in Chapter I, in which it was revealed that the largest proportion of this age group was discharged from the hospital against the advice of the physician. Of the group with which this thesis is concerned, all who have been discharged to date, with one exception, have left the Sanatorium with the permission of the doctor.

Clarence M. Hincks, M.D., General Director, National Committee for Mental Hygiene, has said that known facts indicate that maladjustments will occur to some degree in about 20 percent of the general population, and that it can reasonably be expected that a greater proportion of maladjustments will occur in patients who have tuberculosis.

> The first threat to adjustment and a feeling of security is when the individual realizes that he is a victim of tuberculosis. According to Williams and Hill who studied the histories of 1499 patients, we are informed that 4 percent collapsed and gave up hope when they became aware of the diagnosis and that 18 percent were disturbed to a varying degree. I suspect that these figures do not tell the whole story and that a much larger percentage were subject to spells of morbid reverie wherein fears, anxieties, apprehensions and lowness of spirits colored thoughts relating to the future, to frustrated ambitions, to separation from family circle and friends, to plight of dependents and so on.

> Following the acceptance of a diagnosis, the next series of adjustments that patients are called upon to face are those connected with hospitalization and treatment. It may be difficult for many to fall in line with requirements for prolonged periods of rest, or to submit to operative procedures, or to accept relapses when they occur, or to maintain morale and courage over a long haul....And so we should not be surprised to learn that in a study of one hundred patients at the Cragmor Sanatorium, Forster and Shepard discovered that 31 were the victims of such emotional states as fear, anxiety, fatigue and frustration. Of this total of 31 there were 20 diagnosed as psychoneurotic, 4 were psychotic, and 7 had simple maladjustments.
>
> Facts of this nature indicate that there is an urgent challenge for constructive efforts along mental health and educational lines in sanatorium practice.[1]

It may reasonably be assumed that these same types of maladjustment rising from similar causes will be found in some measure in all sanatoria, thus making imperative the specialized personnel services required to meet these situations.

Sex in relation to adjustment.-- Table 4 shows but little difference in sex for the total group studied.

Table 4. Sex Distribution of 155 Tuberculous Patients by Activity Groups.

Group	Male	Female	Total
I	48	36	84
II	6	13	19
III	8	12	20
IV	17	15	32
Total	79 or 50.5%	76 or 48.6%	155

According to Holland Hudson, Director of the Rehabilitation Service of the National Tuberculosis Association, younger women seem to

1/Clarence M. Hincks, "The Psychotherapy of Rehabilitation of Patients in Tuberculosis Hospitals," Reprinted from the Transactions of the Thirty-Third Annual Meeting of the National Tuberculosis Association, 1937, p. 2.

Table 4. Sex Distribution of 150 Tuberculous Patients by Activity Groups.

Group	Male	Female	Total
I	66	35	81
II	6	13	19
III	8	12	20
IV	17	13	30
Total	79 or 52.6%	71 or 47.4%	150

have a more realistic attitude toward pre-vocational subjects than males in the same age group. Recognized leaders in the field of rehabilitation in Massachusetts, who were questioned on the subject, were agreed that men present greater difficulty in adjusting to treatment than women. When reduced to inactivity after having lead a normal life, the prospect of facing a long period of confinement offers a devastating picture to the man who has always lead an independent life. There are fewer activities along the lines of occupational therapy for men than for women. Women in general enjoy the type of work which can be carried on during treatment, such as sewing, knitting, and crocheting. They are usually more content to be inactive and dependent than men.

These facts point to the necessity for providing an adequate work program for men which will keep them reasonably happy and contented during confinement in the hospital. Men who become restive under treatment, particularly those who have families to support, are much more apt to leave the sanatorium against advice. There are those also who refuse hospitalization because of family or financial responsibilities until such a late age that adjustment is extremely difficult or impossible.

Figures in Group II show only half as many men as women who are pursuing further education in preparation for work. A fairly large number of men intending to return to previously held jobs, refuse to be trained for new work even though there is a probability that a breakdown will occur if they return to their former occupations. The need for competent counseling service in such situations to help these men to undertake new plans willingly, is apparent.

As for emotional adjustment, men are said to show slightly more neurotic tendencies than women, according to Irvin T. Shultz, who compared patients at the Sunnyside Sanatorium, Indianapolis, with norms as given by the Bernreuter Personality Inventory. Results of this same study show that men are less self-sufficient, less introverted, and more apt to lack self-confidence than women. Men and women were found to be about equal in sociability.

"Causal factors are probably to be found in more or less commonly expected childhood and adolescent problems of adjustment and habit formation, likely intensified by emotional shock and institutional confinement, rather than the direct effects of institutional confinement and illness."

In his conclusions Mr. Shultz says that both "men and women are more neurotic, more lacking in self-confidence, more introverted, more submissive and more gregarious than the norms of the Bernreuter would predict."[1/]

These findings, even though limited, point to the importance of early guidance in dealing with tuberculous patients. The sooner the program of rehabilitation is started the better the chance of preventing the development of maladjustments and discharges before the completion of the cure.

Marital status in relation to adjustment.-- Table 5 shows that forty-nine or 31.6 percent of the group studied are married; ninety or 58 percent are single; six are engaged to be married; and a small

1/Irvin T. Shultz, "Psychological Factors in Tuberculous Patients," American Review of Tuberculosis, XLIII (April, 1941), p. 562.

Table 5. Marital Status of 155 Tuberculous Patients.

Status	Number of Patients	Percent
Single	90	57.6
Married	49	31.3
Engaged	6	3.8
Separated	4	2.5
Divorced	5	3.2
Widowed	1	.6
Total	155	

percentage are separated or divorced. One is widowed.

The married group offers a greater problem in adjustment than the unmarried group, because there again is the question of dependents. Members of this group are eager to return to work regardless of the suitability of the occupation. The single person of marriageable age is anxious to marry and establish a home and family. The single person, however, is usually more willing to engage in long-range future plans which will safeguard his own physical well-being. The married man is less likely to want to spend a long time in training for employment. The divorced or separated group has a tendency to show definite emotional reactions which influence adjustment.

Economic factors which influence adjustment.-- Table 6 shows that one hundred and eleven patients or 71 percent of the total group come from families which were said to be self-supporting. Self-support as here defined refers to the patient's statement at the time of interview that his family were not receiving public assistance. The degree of self-support was not stated. Since the majority of patients are unable to pay their board at the Sanatorium it is probable that the

Table 8. Marital Status of 150 Tuberculous Patients.

Status	Number of Patients	Percent
Single	90	57.6
Married	49	31.3
Engaged	9	5.8
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Divorced	3	1.8
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Total	156	

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Table 6. Economic Status of Patient's Family.

Status	Number of Families	Percent
Self-supporting--in remunerative employment	111	71.0
On relief	30	19.2
Partially self-supporting	9	5.7
On W.P.A.	1	.6
Old age pension	1	.6
Supported by wife	1	.6
Supported by grandparents	2	1.2
Total	155	

income is limited and often actually inadequate.

Nationality as it affects adjustment.-- Nearly 50 percent of the entire group are of American parentage. Seventeen other nationalities are represented. Nationality in relation to training and placement has some significance. Results are apt to be prolonged in the total adjustment of patients of foreign birth; especially is this noted where there is a language difficulty. As to the problem in relation to race, Dr. H. E. Kleinschmidt reports "that negroes show three times as many deaths from tuberculosis as do whites. Irish-Americans present high death rates. Italian-Americans slightly higher than average. Jews present rates below the average."[1/]

Social adjustment is often difficult for those of foreign birth or parentage. An educational problem may arise due to lack of educational background. Placement is frequently a more complicated task. With the younger group, however, less difficulty is encountered.

Personal factors such as have been mentioned, have a marked

1/H. E. Kleinschmidt, "Tuberculosis," Social Work Year Book, 1939, Russell Sage Foundation, New York, p. 445.

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Total	156	

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[1] E. K. Klinenschmidt, "Tuberculosis," Social Work Year Book, 1929. Russell Sage Foundation, New York, p. 440.

Table 7. Nationality Descent of 155 Tuberculous Patients.

Nationality	Number of Patients	Percent
American	73	46.7
Irish	19	12.1
Italian	18	11.5
Canadian	13	8.3
English	7	4.4
Russian	4	2.5
Polish	3	1.9
Jewish	3	1.9
Norwegian	3	1.9
Scotch	2	1.2
Albanian	2	1.2
Portuguese	2	1.2
German	1	.6
Latvian	1	.6
Welsh	1	.6
Lithuanian	1	.6
Hungarian	1	.6
Finnish	1	.6
Total	155	

tendency to affect the total rehabilitation of the patient. The brief analysis given above shows to some extent the complexity of the problem and the vital need for a sound guidance program.

Table 7. Nationality Descent of 150 Tuberculous Patients.

Nationality	Number of Patients	Percent
American	75	50.7
Irish	19	12.7
Italian	18	11.3
Canadian	12	8.3
English	7	4.6
Russian	4	2.8
Polish	3	1.9
Jewish	3	1.9
Norwegian	3	1.9
Scotch	3	1.8
Albanian	3	1.8
Portuguese	3	1.8
German	1	.6
Latvian	1	.6
Welsh	1	.6
Lithuanian	1	.6
Hungarian	1	.6
Finnish	1	.6
Total	150	

CHAPTER V

PHYSICAL FACTORS AS THEY RELATE TO REHABILITATION

While this study is concerned primarily with rehabilitation and aftercare of the tuberculous patient, certain important physical factors which relate to the rehabilitation problem should receive specific attention.

Stage of the disease.-- The statement has been made that only about 10 percent of all the patients discharged alive from Middlesex County Sanatorium present suitable vocational rehabilitation material.

The National Tuberculosis Association suggests a slightly higher figure and states that from 10 to 25 percent of the total list of discharged patients for the country at large have the requirements for successful rehabilitation. An improved case-finding program wherein a larger number of cases are discovered in the early stages of the disease would probably increase the number of those who can be assisted in obtaining suitable employment. While this number appears comparatively small, consideration should be given to certain classifications of individuals who obviously do not qualify for or require rehabilitation service. Vocational rehabilitation is not, for the most part, practical for the following groups:

1. Persons who may safely return to gainful employment pursued before illness.

2. Housewives who will return to their homes.

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1. Persons who may safely return to gainful employment pursued before illness.

2. Housewives who will return to their homes.

3. Persons under age for vocational training.

4. Persons beyond the age usually responsive to rehabilitation procedures.

5. Persons whose physical condition prohibit employment in any normal work situations.

6. Mentally incompetent patients.

7. Other persons not interested in training.[1]

This does not preclude, however, other closely related services for these groups such as a reading program, occupational therapy, or cultural and educational courses. The majority of these patients can derive benefit and enjoyment from these activities.

The diagnosis on admission to the sanatorium has a definite relation to the rehabilitation of the patient. While in the past the minimal case was considered by far the best risk, experience has shown that the moderately advanced case and often the far advanced case can be selected for rehabilitation providing the type of employment is suitable and follow-up and aftercare adequate. However, the difficulties are greater and the cost considerably more the farther advanced the disease is when treatment begins.

The majority of the patients who were considered in this study were reported to be in the moderately advanced stage of the disease when admitted to the sanatorium. Only a few were minimal cases and several were far advanced when admitted. Pertinent information pertaining to diagnosis on admission, however, is available for the entire patient population of the Middlesex County Sanatorium during

1/Holland Hudson, "How Many?" National Rehabilitation News, VIII (January, 1942), p. 6.

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[1]Holland Burden, "How Many?" National Rehabilitation News. VIII (January, 1940), p. 6.

1941, and a significant trend may be seen. There were 13.2 percent of patients admitted who were diagnosed as having minimal tuberculosis, 33.99 percent were advanced cases, and 52.81 percent were far advanced.[1] It is evident that until tuberculosis case-finding procedures advance to the point where far more patients are diagnosed in the early stages of the disease, the low percentage of patients who are suitable for rehabilitation will continue to be a problem of paramount importance.

The relation of length of stay in the sanatorium to adjustment.--The length of the patient's stay in the sanatorium varied from two months to nine and one-half years for those who have been discharged. The average period of confinement was approximately 18 months. In regard to the length of stay in the sanatorium in relation to the rehabilitation problem, Terry C. Foster, Research Agent, Vocational Rehabilitation Division, United States Bureau of Education, has stated that the patient who has spent more than three years in the sanatorium, from a physical viewpoint is usually a stubborn case and may not represent a good risk for rehabilitation. He also feels that the person who spends less than seven months in the hospital probably either was prematurely discharged or left against the advice of the physician.

> On the whole, it appears that from the standpoint of length of treatment, the best risk for rehabilitation is the case which was under treatment for not less than seven months nor more than thirty-six months--depending somewhat upon the stage of the disease on admission and the response of the patient to treatment. Obviously there are exceptions....every case must be

1/Tenth Annual Report of the Middlesex County Sanatorium, 1941.

1961, and a significant trend may be seen. There were 15.2 percent of patients admitted who were diagnosed as having minimal tuberculosis, 33.0% percent were advanced cases, and 33.8% percent were far advanced. [1] It is evident that until tuberculosis case-finding procedures advance to the point where far more patients are diagnosed in the early stages of the disease, the low percentage of patients who are suitable for rehabilitation will continue to be a problem of paramount importance.

The relation of length of stay in the sanatorium to adjustment.--The length of the patient's stay in the sanatorium varied from two months to nine and one-half years for those who have been discharged. The average period of confinement was approximately 18 months. In regard to the length of stay in the sanatorium in relation to the rehabilitation problem, Terry C. Foster, Research Agent, Vocational Rehabilitation Division, United States Bureau of Education, has stated that the patient who has spent more than three years in the sanatorium, from a physical viewpoint is usually a stubborn case and may not represent a good risk for rehabilitation. He also feels that the person who spends less than seven months in the hospital probably either was prematurely discharged or left against the advice of the physician.

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[1] Texas Annual Report of the Middlesex County Sanatorium, 1961.

considered on its own merits.[1]

Number of admissions and adjustment.-- As to the relation of the number of admissions to the sanatorium to rehabilitation:

> Experience has shown that the patient who has had a number of admissions is generally a poor risk for rehabilitation, particularly if the periods of hospitalization were short. However, in some instances the reason for discharge and readmissions may show that several admissions were either desirable or necessary by virtue of circumstances in the home of the patient or in the sanatorium.[2]

One of the more important objectives of a rehabilitation service is to prevent discharges against advice and readmissions due to breakdowns. This may be accomplished to a large extent by in-sanatorium adjustment and a long-range plan for occupational adjustment.

Table 8. Number of Patients with One or More Admissions to the Sanatorium.

Number of Admissions	Number of Patients	Percent
1	128	82.5
2	21	13.4
3	6	3.8
Total	155	

Since the group studied have all had the advantage of one or more of the coordinated rehabilitation services, the probability is that the large percentage of patients who had only one admission as shown in Table 8 have benefited from the services offered to them to a

1/Terry C. Foster, Pulmonary Tuberculosis, Misc. 2328 (Revised), Federal Security Agency, United States Office of Education, Vocational Rehabilitation Division, Washington, D. C., 1941, p. 5.

2/Ibid., p. 7.

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One of the more important objectives of a rehabilitation service is to prevent discharges against advice and readmissions due to breakdowns. This may be accomplished to a large extent by in-sanatorium adjustment and a long-range plan for occupational adjustment.

Table 6. Number of Patients with One or More Admissions to the Sanatorium

Number of Admissions	Number of Patients	Percent
1	188	84.3
2	31	13.4
3	6	2.8
Total	188	

Since the group studied here all had the advantage of one or more of the coordinated rehabilitation services, the probability is that the large percentage of patients who had only one admission as shown in Table 6 have benefited from the services offered to them to a

1/ Terry C. Foster, Pulmonary Tuberculosis, Mimeo. 8388 (Revised), Federal Security Agency, United States Office of Education, Vocational Rehabilitation Division, Washington, D. C., 1941, p. 23.

2/ Ibid., p. 7.

reasonable degree.

Type of treatment.-- The type of treatment which the patient undergoes influences the adjustment of the patient both to the sanatorium and treatment and to vocational adjustment after discharge.

Table 9. Type of Treatment Received by 155 Tuberculous Patients.

Type of Treatment	Number of Patients	Percent
Bed rest only	40	25.6
Unilateral pneumothorax	73	46.7
Bilateral pneumothorax	25	16.0
Thoracoplasty	9	5.7
Phrenic nerve operation	8	5.1
Total	155	

In Table 9 it can be seen that about 75 percent of the total group received some type of treatment other than bed rest. The treatment has taken some form of collapse of the diseased lung. Collapse therapy is a form of treatment which causes the lung to be immobile so that more rapid healing can be achieved.

Pneumothorax, the most common form of collapse therapy, is a type of treatment by which filtered air or gas is injected between the diseased lung and the chest wall. This treatment can be continued for years after the patient has been discharged. He may lead a normal life in the meantime, returning to the sanatorium periodically for refills in order to maintain collapse until the lung is entirely healed. Cases which have been carefully selected from this group are usually feasible for rehabilitation.

There is an occasional condition in which the phrenic nerve is

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Type of treatment.-- The type of treatment which the patient undergoes influences the adjustment of the patient both to the sanatorium and treatment and to vocational adjustment after discharge.

Table 9. Type of Treatment Received by 185 Tuberculous Patients.

Type of Treatment	Number of Patients	Percent
Bed rest only	40	21.6
Unilateral pneumothorax	73	39.5
Bilateral pneumothorax	28	15.1
Thoracoplasty	9	4.9
Phrenic nerve operation	35	18.9
Total	185	

In Table 9 it can be seen that about 79 percent of the total group received some type of treatment other than bed rest. The treatment has taken some form of collapse of the diseased lung. Collapse therapy is a form of treatment which causes the lung to be immobile so that more rapid healing can be achieved.

Pneumothorax, the most common form of collapse therapy, is a type of treatment by which filtered air or gas is injected between the diseased lung and the chest wall. This treatment can be continued for years after the patient has been discharged. He may lead a normal life in the meantime, returning to the sanatorium periodically for refills in order to maintain collapse until the lung is entirely healed. Cases which have been carefully selected from this group are usually favorable for rehabilitation.

There is an occasional condition in which the phrenic nerve is

rendered inactive and the expansion and contraction of the diaphragm is reduced until the lung is healed. This may be temporary or in some cases permanent. In the first instance the nerve is merely rendered inactive for a period of time. In other cases the nerve is severed and made permanently inactive.

Thoracoplasty consists of removing parts of some ribs or possibly all on one side in order to accomplish a permanent collapse of the lung. This treatment is especially important for rehabilitation. The stages of thoracoplasty should be known by the worker since there may be a secondary disability. In planning for employment care must be taken to avoid occupations which require lifting and bending.

These various forms of treatment do not necessarily shorten the length of stay in the sanatorium. They do however reduce the time the patient must submit to bed rest. While convalescing the individual can carry on some form of normal activity. There are a few who can return to their jobs or engage in some type of vocational training while receiving treatment. It is, unfortunately, seldom found that the occupation engaged in before illness is a suitable one for the patient to pursue.

From the standpoint of emotional adjustment, the patient who must undergo various forms of treatment, particularly the more serious types of surgery, are known to develop fears and anxieties, feelings of hopelessness and extreme depression. The in-sanatorium adjustment to treatment belongs in the role of the rehabilitation worker, who, within a short time after admission to the hospital, in cooperation with

workers in the sanatorium can help the patient to overcome his difficulties and instill within him a feeling of security and hope for the future. Something useful and purposeful may be provided to occupy his time and plans for future vocational adjustment can be formulated.

The rehabilitation worker in Middlesex County Sanatorium is responsible for suitable training and placement of patients who have undergone various types of treatment. A choice of training and occupation is made with and for the patient upon the advice of the physician in charge of the case.

There is also the problem of selling the employment of the cured or arrested patient to the employer who is still in some instances reluctant to rehire or give initial employment to a tuberculous individual. Concerning the employment of patients who have had tuberculosis Edward Hochhauser has said:

> Returning to a job after successful treatment or to a readjusted job with his old employer has many advantages for the patient. It also has advantages for the employer. It pays both as truly as in neglect they both pay. The time is ripe for a campaign of education on the employability of the arrested case of tuberculosis. It should be directed toward the employer, his personnel manager, his medical director and his foreman. Many are interested, some are looking for advice and guidance, and a substantial number have had experiences that prove conclusively that the tuberculous worker can be profitably reemployed. Much depends on the individual patient himself, his understanding, willingness and ability to cooperate.[1]

Public health education with the employer group is a major activity which voluntary organizations must continue with relentless effort.

1/ Edward Hochhauser, "Industrial Aspects of the Rehabilitation Problem of the Tuberculous," Reprinted from the Transactions of the Thirty-Fourth Annual Meeting of the National Tuberculosis Association, 1938.

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CHAPTER VI

THE INFLUENCE OF EDUCATION AND TRAINING FACTORS IN REHABILITATION

Guidance, as it pertains to the tuberculous, is concerned with the patient as an individual. As such, he has his own particular educational background, home and religious training, and previous occupational experience, all of which contribute to or detract from his later occupational adjustment. His mental attributes are equally varied. He has personality factors which may either compensate for his physical defect or they may increase his difficulties. Occasionally he may adjust without assistance. The probability is, however, that he will need the help of part or of all the related services within the sanatorium if he is to resume his place in the community as a self-supporting citizen. This chapter and the one following include a description of the educational and training factors influencing the occupational adjustment of the group selected for study and a consideration of these aspects of the rehabilitation program.

The significance of these factors in the sanatorium situation is greatly heightened when the age status of patients, as revealed in Chapter I, is noted. It will be recalled that approximately 50 percent of the patients on admission to the sanatorium are under 30 years of age. Comparable to these figures are those in Table 2, page 37, which indicate that of the 155 patients included in this study, 63.3 percent

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THE INFLUENCE OF EDUCATION AND TRAINING FACTORS IN REHABILITATION

Evidence, as it pertains to the tuberculous, is concerned with the patient as an individual. As such, he has his own particular educational background, home and religious training, and previous occupational experience, all of which contribute to or detract from his later occupational adjustment. His mental attributes are equally varied. He has personality factors which may either compensate for his physical defect or they may increase his difficulties. Occasionally he may adjust without assistance. The probability is, however, that he will need the help of part or of all the related services within the sanatorium if he is to resume his place in the community as a self-supporting citizen. This chapter and the one following include a description of the educational and training factors influencing the occupational adjustment of the group selected for study and a consideration of these aspects of the rehabilitation program.

The significance of these factors in the sanatorium situation is clearly heightened when the age status of patients, as revealed in Chapter I, is noted. It will be recalled that approximately 80 percent of the patients on admission to the sanatorium are under 30 years of age. Comparable to these figures are those in Table 2, page 27, which indicate that of the 100 patients included in this study, 83.3 percent

were found to be under 30. Since the factor of training for vocational competence for individuals up to this age is of such vital importance, and since the productive capacity of the worker around this age should normally be on the increase, it is probable that the greatest amount of rehabilitation material is to be found in this age group. This does not presuppose the neglect of the patient who is beyond the age of 30 who can well profit by further education to improve his present line of work, or who may need re-training for a new type of occupation more suitable to his physical condition.

Opinions have differed in the past as to when rehabilitation services should begin and when educational procedures and a training program can safely be initiated. A generally accepted viewpoint is expressed by Foster as follows:

> While it is believed that in general it is safer to defer substantial rehabilitation service until the arrested stage is reached it is considered feasible and even advisable under favorable circumstances to begin limited services at some point during the apparently arrested stage. If the sanatorium makes available suitable facilities for training in the sanatorium the rehabilitation department may be justified in participating in the provision of certain types of training courses.[1]

The patient should be able to do some reading before any type of education or training begins. In Middlesex County Sanatorium the library is available for every individual, and reading material is chosen or suggested by the librarian having in view an occupational objective when practical or for diversion when training is not to be considered. In the group studied a good percentage of the patients were able to start educational courses reasonably soon after the

1/Terry C. Foster, Pulmonary Tuberculosis, p. 21.

were found to be under 50. Since the factor of training for vocational competence for individuals up to this age is of much vital importance, and since the productive capacity of the worker around this age should normally be on the increase, it is probable that the greatest amount of rehabilitation material is to be found in this age group. This does not presuppose the neglect of the patient who is beyond the age of 50 who can well profit by further education to improve his present line of work, or who may need re-training for a new type of occupation more suitable to his physical condition.

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1 Terry D. Foster, Pulmonary Tuberculosis, p. 81.

prognosis of the disease was determined. As previously stated it is the policy of this Sanatorium to offer pre-vocational education as soon as the patient is physically able to carry on the work.

Basic education before onset of disease.-- A knowledge of the patient's former educational achievement is exceedingly important in determining his pre-vocational education and training while in the sanatorium. The type of employment in which the individual who has had tuberculosis can safely engage is to be found in the fields based on skills requiring a fair amount of fundamental education. It is imperative that the training the patient chooses be of a type which will enable him to support himself by some work other than manual or unskilled labor.

An analysis of the grade level of cases studied (Table 10) shows that sixty-seven or 42.8 percent of the patients had completed high school. Fifty-three or 33.9 percent had from one to three years of high school, and seventeen or 10.7 percent went on to college. Seven were college graduates, and one patient entered medical school completing two years before he broke down with tuberculosis. Seventeen or approximately 10 percent did not proceed beyond the elementary grades. The educational mean for the entire group was 10.5 which is slightly below the average for the total Sanatorium group of 11.3, probably due to the fact that at the time the mean was determined for the Sanatorium population there were several college graduates, a doctor, and a school superintendent who were patients. Considering the educational mean of the group and the fact that we are dealing

Table 10. Educational Status of 155 Tuberculous Patients.

Last Grade Completed	Number of Patients	Percent
I	1	.6
II	0	
III	0	
IV	0	
V	1	.6
VI	4	2.5
VII	3	1.9
VIII	8	5.1
IX	21	13.5
X	20	12.8
XI	12	7.6
XII	67	42.8
XIII	7	4.4
XIV	3	1.9
XV	0	
XVI	7	4.4
Medical school--2 years	1	.6
Total	155	Mean 10.5

with young people, it is highly essential that a plan be formulated which will help the individual to overcome any educational deficiency which exists.

The problem presented in the above table is complex in that the amount of basic education varies to such an extent. The task is a difficult one for the rehabilitation worker or educational worker because individual needs of the patients must be met which will correlate with physical capacity, native ability, educational background, and personal outlook on the future.

The high school curricula pursued by the individual in most cases influences the choice of pre-vocational training in the sanatorium.

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XIII	7	4.4
XIV	3	1.9
XV	0	
XVI	7	4.4
Medical School--2 years ..	1	.6
Total	155	Mean 10.8

For example, those who have chosen commercial courses in high school usually continue this type of work.

Table 11 shows the high school curricula pursued by the patients in Groups I, II, and III. Of those who chose the college curricula

Table 11. High School Curricula Pursued by Tuberculous Patients.

Course	Number of Patients	Percent
College	16	10.2
Technical	15	9.6
Commercial	45	28.8
Scientific	7	4.4
General	18	11.5
Trade	4	2.5
Did not attend high school .	18	11.5
Non-prospect group	32	20.4
Total	155	

there were several students whose college work was interrupted by tuberculosis but who expect to return to school as soon as they are physically able. There were also several professional people who will return to their former professions. Those who chose technical training have a choice of several suitable occupations and if their work had not been completed in high school they may be assisted in completing it either in the Sanatorium or in technical schools after discharge. If the patient has had commercial training in high school and is still interested, he is encouraged to continue commercial work since most types of secretarial work are particularly suited to the tuberculous patient. Those who have had trade school training may be able to continue this work after discharge, providing the type of work is not too

for example, those who have chosen commercial courses in high school usually continue this type of work.

Table II shows the high school curricula pursued by the patients in Groups I, II, and III. Of those who chose the college curricula

Table II. High School Curricula Pursued by Tuberculous Patients.

Courses	Number of Patients	Percent
College	16	10.8
Technical	16	9.8
Commercial	45	28.8
Scientific	7	4.4
General	18	11.8
Trade	4	2.8
Did not attend high school .	18	11.8
Non-prospect group	32	20.4
Total	156	

there were several students whose college work was interrupted by tuberculosis but who expect to return to school as soon as they are physically able. There were also several professional people who will return to their former professions. Those who chose technical training have a choice of several suitable occupations and if their work had not been completed in high school they may be completed in completing it either in the Sanatorium or in technical schools after discharge. If the patient has had commercial training in high school and is still interested, he is encouraged to continue commercial work since most types of secretarial work are particularly suited to the tuberculous patient. Those who have had trade school training may be able to continue this work after discharge, providing the type of work is not too

heavy. These people are frequently encouraged to do cabinet making or to work with small tools or small machines. The chief difficulty in guiding the tuberculous lies with the group who have had an elementary education only. Many of these patients were engaged in unskilled labor and could not continue this work. These people can be trained, however, and in many instances learn to do certain types of skilled employment.

Of the total group there were thirty-one or 19.8 percent (Table 12) who went beyond high school and prepared for some special work, the length of course varying from three months to three years.

Table 12. Post-High School Vocational Education Pursued by 31 Tuberculous Patients.

Type of Course	Length of Time Enrolled	Number of Patients
Nurses training (graduate)	3 years	4
Nurses training	2 years	5
Commercial schools	2 years	3
Commercial schools	1 year	3
Commercial Schools	less than 1 year	4
Trade school	2 years	3
Trade school	1½ years	1
School of accounting	3 years	1
Technical school	3 years	1
Technical school	5 months	1
Normal school	2 years	1
School of engineering	2 years	1
Vocational school (mechanical)	3 months	1
Conservatory of music	1 year	1
School of banking	2 years	1
Total		31 or 19.8%

In some instances the vocational education chosen fitted the individual for work to which he can safely return after completing the cure. Nurses are discouraged from pursuing bedside nursing which involves heavy lifting and have been successfully trained as medical secretaries or laboratory technicians. With few exceptions those people who continued their education beyond high school have found it less difficult to return to normal living after leaving the sanatorium.

Educational procedure during treatment.-- The patients who were included in this study were all eligible for one or more in-sanatorium services. A program was planned by the rehabilitation worker in cooperation with the educational worker and based upon the findings of the rehabilitation clinic to be initiated as soon as the patient was physically able to think in terms of future plans. Pre-vocational education consisted in instructing the patient through University Extension courses along lines which would help him in carrying on a systematic course of training when discharged, in professional, business, or trade school. In some instances formal testing was included for the purpose of determining the individual's interests and aptitudes. For the most part tests are used by the rehabilitation worker in Middlesex County Sanatorium when the choice of an educational course is questioned or when the interest is not clearly defined. Personality tests are sometimes given, but this practice is not general. The testing procedure is frequently carried on while the patient is still in bed or convalescing. Twenty-eight individuals in the group studied were given aptitude tests.

Donald G. Paterson, a leader in scientific research as related to vocational guidance says regarding the matter of the use of tests with tuberculous patients that

> evidence is steadily accumulating that occupational guidance and training programs, to be effective, must be based on a detailed study of the individual. Furthermore, it is clear that the ordinary individual is unable to make such a study for himself. Hence self-appraisal and self-guidance must be supplemented by the expert vocational diagnostician.
>
> The vocational diagnostician approaches his task armed with techniques for the study of the individual that have developed only recently to a point where applications are warranted. In addition to the time honored interview, he can now utilize an increasing array of dependable tests and measurements.
>
> For example, numerous standardized intelligence tests are available. They permit a rough estimate of "academic learning ability" as an indicator of the type of training that can be undertaken with probable success. Then we have numerous standardized achievement tests to check the educational status of the patient. And numerous trade tests exist to verify the validity of the occupational preference of the patient as an indicator of vocational competence.
>
> In addition, aptitude and special ability tests are available as a means of discovering unusual talents that might be converted into occupational assets through proper training programs... Vocational tests are also available, permitting a quantitative measure of the extent to which a patient's interest patterns correspond to vocational interest patterns of workers in a variety of occupational pursuits. Attitude and adjustment inventories are on hand to give a clue to the patient's morale or outlook on the future, his social adjustments, and his personal reactions to his own health status.
>
> The significance of all these diagnostic aids must be interpreted in the light of the patient's medical record, and his educational, occupational and social history. The patient himself must then be informed of all available facts and interpretations and must himself actively cooperate in working out of occupational goals. Finally, the diagnostician and guidance specialist must aid the patient in translating these plans into accomplished achievements in a self-supporting job.[1]

1/Donald G. Paterson, "Individual Diagnosis--An Essential Step," Occupations, XV (April, 1937), pp. 596-597.

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[1] Donald G. Paterson, "Individual Diagnosis--an Essential Step," Occupations, XV (April, 1937), pp. 366-367.

In the light of this statement the adequacy of the present testing program for obtaining objective data on the several aspects of the vocational competence of every patient included in the rehabilitation program might well be questioned.

There were fifty-nine patients or 37.7 percent from Groups I, II, and III who took advantage of University Extension courses. These

Table 13. University Extension Courses Taken by Tuberculous Patients While in the Sanatorium.

Course	Number Enrolled
Algebra	2
Accounting	1
Bookkeeping	2
Business arithmetic	1
Business English	1
Business law	1
Business psychology	1
Catering	1
Chemistry	1
Drafting	1
Dress design	1
English	11
Freehand drawing	1
Heating and lighting	1
High school extension	2
Mechanical drawing	1
Mechanical training	1
Interior decorating	1
Radio	1
Salesmanship	1
Shorthand	21
Stenotyping	1
Traffic management	1
Typing	2
Ventilating and heating	1
Total	59 or 37.7%

courses were usually chosen on the basis of interest and with an occupational objective in view. Cultural courses are chosen purely from expressed interest. Frequently changes have had to be made and occasionally courses are not completed. Probably interest alone is not sufficient basis upon which to determine the choice of courses and the use of guidance techniques to eliminate unwise selections is indicated.

The courses which were chosen indicate a wide variety of interest. If the choice is indicative of the aptitude and ability of the patient as well as an expressed interest, the type of courses which were selected might well be considered as related vocational courses and when supplemented by training after discharge, prove to be important preparation in occupational adjustment.

CHAPTER VII

POST-SANATORIUM TRAINING AND PLACEMENT AS FACTORS IN REHABILITATION

As has been noted in previous chapters, the tuberculous patient in a comprehensive rehabilitation setup has been the recipient of several related services. During the period of treatment in the sanatorium a diagnosis of the patient has been made in terms of what kind of a person he is; how he reacts to varying circumstances; what he likes or dislikes; in what field he excels and where he falls short. The combined facilities of the hospital have been available to him, and some type of education or training comparable to the occupation which he hopes to follow after leaving the sanatorium has been in progress. His case has been brought before the rehabilitation clinic, and final plans have been made for him to continue training or to be placed in suitable employment after his discharge.

Sheltered work available.-- A transfer from the sanatorium to the job, however, cannot usually take place without a period of graduated activity either at home or at a training center or sheltered workshop where medical supervision is provided. Two such institutions are available in Massachusetts. The Rutland Training Center, in Rutland, Massachusetts, receives arrested cases who need vocational rehabilitation. Here patients who have no homes, or whose family situation is

such that a return to the home is impractical, are trained in useful occupations. Private funds, the cooperation of local and State health departments, and donations from the sale of Christmas seals help to pay for the patients' board and training. The Center is well-staffed, having a director, two graduate nurses, and several well-trained teachers. Medical attention and supervision is provided. Fifty patients can be accommodated. Commercial courses, including typing, comptometer operation, stenography, bookkeeping, and multigraphing are taught. Men may take woodworking and cabinet making or chauffeur-gardening with practical experience on the ground and in the greenhouse. Young women may learn to sew or train for simple attendant nursing. Usually patients begin with from two to four hours of work, depending upon the work tolerance of the individual and the advice of the physician. Each case is considered individually and work hours are increased gradually. The patient stays until he can accomplish a day's work without undue fatigue.

The Boston Tuberculosis Association maintains a sheltered workshop at 35 Tyler Street, Boston, where arrested cases of tuberculosis are received who need employment under sheltered conditions. The selection of patients for the Sheltered Work Shop is made upon a basis of interest and aptitude for the type of training offered. Individuals may be taught garment making, the restricted use of power machines, furniture and cabinet making, and craft work of various kinds. Here again, all work is done under the supervision of the physician, and rest periods are enforced. At the beginning the patient is allowed

to work only two hours a day, and his hours of work are increased as his physical condition permits. He is paid on an hourly basis and in addition receives a hot lunch.

Considering the group of 155 patients and the occupations which they pursued before illness, evidence can be seen that a varied number of capacities and skills are represented. These occupations are recorded for men in Table 14 and for women in Table 15. They were listed according to the United States Employment Service classification. These figures, although admittedly limited by the scope of the study, are in keeping with the known fact that although tuberculosis is no respecter of persons, it least affects the professional and clerical workers or skilled craftsmen and takes its greatest toll from the industrial or unskilled labor group. It is in the low economic group that the greatest amount of tuberculosis is found. Only sixteen persons are classified as professional workers while forty-two are listed as salespersons and clerical workers. Fifty-eight or approximately 37 percent of the total group studied are included under the first three classifications, and it is probably safe to assume that a fairly large proportion of these people will be able to resume their former occupations or some similar work after discharge from the Sanatorium. There is probably less likelihood that persons classified under service workers and semiskilled production workers will be able to return to their former work. Unsatisfactory working conditions and a limited earning capacity preclude this type of employment for most tuberculous patients. Many of the skilled crafts are suitable for tuberculous

Table 14. Distribution by Occupations of 79 Male Tuberculous Patients.

Professional	Salespersons	Clerical	Service Workers
Technician	Outside	Accountant ... 1	Personal Service
Draftsman 1	Salesman 5	Office clerk . 2	Baker 2
Semiprofessional	Fruit peddler 1	Postal clerk . 2	Barber 1
Newspaper reporter 1	Related Service	Shipping clerk 1	Gateman 1
Administrative and Supervisory	Buyer 2	Stock clerk .. 2	Chauffeur ... 3
Building superintendent .. 1			Bell boy 1
Contractor ... 1			Laundry worker 1
Restaurant manager 1			Delivery boy 1
Factory superintendent .. 1			Maintenance
Dairy business 3			Janitor 1
Grocer 1			U. S. Army .. 1
Total 10	Total 8	Total 8	Total 12
Percent ... 12.6	Percent .. 10.1	Percent.. 10.1	Percent .. 15.1

Craftsmen (skilled)	Production Workers (semiskilled)	Physical Labor (unskilled)	Unclassified
Machinist 1	Press operator 1	Foundry worker 1	Student 6
Meat cutter 1	Woodworker 1	Freight handler 2	Unemployed 6
Ship fitter 1	Shoe worker ... 1	Laborer 1	
Bookbinder 1	Paper factory . 1	CCC worker ... 1	
Watchmaker 2	Icecream factory 1	Pipelayer 1	
Electrician 1	Bleachery worker 1	Truck driver . 6	
Auto mechanic .. 2	Paste manufacturer 1		
Mason 1			
Total 10	Total 7	Total 12	Total 12
Percent ... 12.6	Percent ... 8.8	Percent...15.1	Percent .. 15.1

individuals, and it is possible to select from this classification some occupations in which the patient can safely engage if working conditions are favorable. It is obvious, however, that the unskilled

Table 14. Distribution by Occupations of 79 Male Tuberculous Patients.

Professional	Salesperson	Clerical	Service Workers
Technician	Outside	Accountant ... 1	Personal Service
Draftsman 1	Salesman 3	Office clerk . 3	Baker 3
Semi-professional	Fruit peddler 1	Postal clerk . 3	Barber 1
Newspaper re-	Retail Service	Shipping clerk 1	Caterer 1
porter 1	Buyer 3	Stock clerk .. 3	Chauffeur ... 3
Administrative and			Hall boy 1
Supervisory			Laundry work-
Building super-			er 1
intendent .. 1			Delivery boy 1
Contractor ... 1			Maintenance
Restaurant			Janitor 1
manager 1			U. S. Army .. 1
Factory super-			
intendent .. 1			
Dairy business 3			
Grocer 1			
Total 10	Total 8	Total 8	Total 12
Percent ... 12.6	Percent.. 10.1	Percent.. 10.1	Percent .. 15.1

Craftsmen (skilled)	Production Workers (semiskilled)	Physical Labor (unskilled)	Unclassified
Machinist 1	Press operator 1	Country worker 1	Student 3
Meat cutter 1	Woodworker 1	Freight hand-	Unemployed 3
Ship fitter 1	Shoe worker ... 1	ler 8	
Bookbinder 1	Paper factory . 1	Laborer 1	
Watchmaker 3	Icecream fac-	CCC worker ... 1	
Electrician 1	tory 1	Fireplayer 1	
Auto mechanic .. 3	Glassfactory work-	Truck driver . 3	
Miscon 1	er 1		
	Cable manufac-		
	turer 1		
Total 10	Total 7	Total 18	Total 12
Percent ... 12.6	Percent ... 8.8	Percent...15.1	Percent .. 15.1

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Table 15. Distribution by Occupations of 76 Female Tuberculous Patients.

Professional	Salespersons	Clerical	Service Workers
Nurse ..... 3 Teacher 3	Salesclerk 12	Secretary .. 4 Stenographer 8 Office clerk 2	Waitress ..... 5 Attendant ..... 4 Cook ..... 1 Domestic ..... 3 Ward maid ..... 2 Messenger girl . 1 Telephone operator 3
Total ..... 6 Percent 7.8	Total ..... 12 Percent ... 15.7	Total ... 14 Percent 18.4	Total ..... 19 Percent ... 25.0

Craftsmen (skilled)	Production Workers (semiskilled)	Physical Labor (unskilled)	Unclassified
Candy maker 2	Stitcher ..... 5 Wrapper 1		Housewife ..... 8 Student ..... 7 Unemployed 2
Total ..... 2 Percent 2.5	Total ..... 6 Percent 7.8		Total ..... 17 Percent ... 22.3

physical labor group will need re-training or careful placement in new types of employment. Food handling and related occupations are not recommended for the tuberculous. The severity of the infection is a major consideration. A patient who has a minimal case of tuberculosis might safely engage in a type of employment which would be entirely unsuitable for an individual with a moderately advanced or far advanced case.

Of paramount importance is the fact that training and placement should be considered on an individual basis. Contrary to the theory held by many people that only a few occupations are suitable for the tuberculous person, is the now widely accepted opinion that there are

Table 16. Distribution by Occupations of 76 Female Tuberculous Patients.

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Nurse ..... 3 Teacher 3	Salesclerk 12	Secretary .. 4 Stenographer 3 Office clerk 2	Waitress ..... 5 Attendant ..... 4 Cook ..... 1 Domestic ..... 3 Ward maid ..... 2 Messenger girl . 1 Telephone operator 3
Total ..... 6 Percent 7.8	Total ..... 12 Percent ... 15.7	Total ... 14 Percent 18.4	Total ..... 19 Percent ... 25.0

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Of paramount importance is the fact that treating and placement should be considered on an individual basis. Contrary to the theory held by many people that only a few occupations are suitable for the tuberculous person, is the now widely accepted opinion that there are

many types of employment which the individual who has tuberculosis can safely undertake. Kleinschmidt, for many years an authority in the field of tuberculosis, has said that "No one type of occupation has been found better than another for the ex-patient: the attempt is rather to prepare each individual for the kind of a job he is best fitted for and which will not make undue demands on his individual capacity."[1/]

In the opinion of another authority there are three fundamental requirements as to the kind of work in which a discharged patient could engage:

1. The physical requirements of the job must not overtax the physical capacity of the individual case.

2. The working conditions must not be such as to be conducive to reactivation of the disease.

3. In working at the job the tuberculous person must not subject others to the hazard of contracting the disease.[2/]

The application of guidance to handicapped people.-- The application of personal counseling and guidance practices contributes in a large measure to the satisfactory and continued occupational adjustment of persons who have had tuberculosis. A recent bulletin issued by the United States Office of Education points clearly to the part which personal counseling and vocational guidance contributes to the satisfactory placement of handicapped people. The methods described refer to all types of handicapped individuals and to those occupations which contribute to National defense. They are, however, applicable in any

1/H. E. Kleinschmidt, "Tuberculosis," Social Work Year Book, 1941, p. 565.

2/Terry C. Foster, Pulmonary Tuberculosis, p. 27.

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[1] M. Kleinschmidt, "Tuberculosis," Social Work Year Book, 1941, p. 480.

[2] Harry C. Foster, Pulmonary Tuberculosis, p. 87.

similar situation. To quote from this bulletin which describes the procedures employed by the above agency:

> ....Every applicant must be studied and served according to his individual needs. Physically handicapped applicants vary greatly both in nature and severity of the disability and in education, aptitudes and interests. Each patient, after his case is studied, is guided into a job consistent with his physical limitations as well as with his individual aptitudes, education and interests.... As a basis for guidance the rehabilitation agents are expected carefully to investigate all the factors pertinent to the selection of a vocational objective. It is their responsibility to determine mental and educational levels through school reports and psychological tests; to determine physical capacity through medical examinations; to appraise aptitudes and skills through a careful survey of the applicant's occupational experience; to evaluate personality and work habits by interviews with the client, his family, past employers, and others who have observed his work in the past. Combining this knowledge with his knowledge of jobs, the rehabilitation agent advises the applicant regarding the type of training and employment best suited to his needs.[1]

Although the above quotation has reference to methods of vocational counseling practiced by the State and Federal agencies, the problem involved is identical to that found in the County sanatorium and it is worthy of note that beginnings along the recommended lines are being made with the group under study. All types of handicapped people are served by the State and Federal agencies. Their resources are available for patients with tuberculosis, and several individuals in the group studied were assisted by the Massachusetts Division of Vocational Rehabilitation, one of the State service agencies.

Procedures for vocational guidance at the Middlesex County Sanatorium.-- During a preliminary interview with the patient, information regarding his future occupational plans was obtained. For the most

1/Robert E. Thomas, Vocational Rehabilitation and National Defense, Education and National Defense Series, Pamphlet No. 19, United States Office of Education, Washington, D. C., 1941, p. 11.

Table 16. Occupational Plans of 79 Male Tuberculous Patients.

Professional	Salespersons	Clerical	Service Workers
Rehabilitation worker 1	Salesman 2	Accountant ... 1	Barber 1
Bacteriologist 1		Shipping clerk 1	Chauffeur 2
Technician		General office work 2	
Radio Technician 2		Civil Service clerk 1	
Laboratory Technician . 2			
Chemical Engineer ... 1			
Draftsman 4			
Electrical Engineering 1			
Airplane Engineer ... 1			
Semiprofessional			
Newspaper reporter 1			
Total 14	Total 2	Total 5	Total 3
Percent ... 17.7	Percent ... 2.5	Percent .. 6.3	Percent .. 3.7

Craftsmen (skilled)	Production Workers (semiskilled)	Physical Labor (unskilled)	Unclassified
Poultry raising 1	Machinist 7		Return to school 2
Toolmaker 2			Return to former job..17
Photographer ... 2			No plans 17
Cabinetmaker ... 3			
Printing 1			
Watch repairing 2			
Bookbinder 1			
Total 12	Total 7		Total 36
Percent 15.1	Percent ... 8.8		Percent ..44.3

part his plans were based upon general interest, previous occupation, or training started prior to his illness. Limitations in this procedure will be discussed later. This data is tabulated in Tables 16 and 17 under the same classification as that of Tables 14 and 15. In the

Table 16. Occupational Plans of 70 Male Tuberculous Patients

Professional	Salespersons	Clerical	Service Workers
Rehabilitation worker ..... 1 Accountology 1 Technician Radio Technician ..... 2 Laboratory Technician . 2 Chemical Engineer ... 1 Draftsman .... 4 Electrical Engineering 1 Airplane Engineer ... 1 Sociology-Legal Newspaper re-porter 1	Salesman 2	Accountant ... 1 Bathing clerk 1 General office work ..... 2 Civil Service clerk 1	Barber ..... 1 Chauffeur 2
Total ..... 14 Percent ... 17.7	Total ..... 2 Percent ... 2.5	Total ..... 5 Percent .. 6.3	Total ..... 3 Percent .. 3.7
Creative (skilled)	Production Worker (semi-skilled)	Physical Labor (unskilled)	Unclassified
Country related 1 Toolmaker ..... 2 Photographer ... 3 Cabinetmaker ... 3 Printing ..... 1 Metal tooling 2 Bookbinder 1	Machinist 7		Return to school ..... 2 Return to former job..17 No plans 17
Total .....13 Percent ...16.1	Total ..... 7 Percent ... 8.6		Total .....36 Percent ..44.5

part his plans were based upon general interest, previous occupation, or training started prior to his illness. Limitations in this procedure will be discussed later. This data is tabulated in Tables 16 and 17 under the same classification as that of Tables 14 and 15. In the

Table 17. Occupational Plans of 76 Female Tuberculous Patients.

Professional	Salespersons	Clerical	Service Workers
Occupational therapist 1	Salesclerk 5	Medical secretary .... 2 Comptometer operator .. 1 Stenotypist . 1 General office work 26 Telephone operator .. 2	Companion .... 1 Receptionist . 2 Hairdresser .. 3 Sewing 2
Total ..... 1 Percent 1.3	Total ..... 5 Percent ... 6.5	Total .... 32 Percent..42.1	Total ..... 8 Percent..10.5

Craftsmen (skilled)	Production Workers (semiskilled)	Physical Labor (unskilled)	Unclassified
	Stitcher 1		Housewife ...13 Return to former job 4 Return to school .... 5 No plans 7
	Total ..... 1 Percent ... 1.3		Total .....29 Percent..38.1

total group, twenty-one or approximately 13 percent of the patients stated that they planned to resume their former occupations. Twenty-four or approximately 15 percent said they had no future plans. Seven or approximately 4 percent were students who planned to return to school. Thirteen or approximately 8 percent were housewives who hoped to go back to their duties at home. These people represent approximately 42 percent of the total group of the 155 patients studied. There were, however, several persons in this group who required vocational assistance. Students who planned to return to school were aided in

Table IV. Occupational Plans of 76 Female Tuberculous Patients.

Professional	Salespersons	Clerical	Service Workers
Occupational therapist 1	Salesclerk 3	Medical secretary .... 2 Stenotypist . 1 General office work 23 Telephone operator .. 2	Companion .... 1 Housekeeper . 2 Nursemaid .. 3 Sewing 2
Total ..... 1 Percent 1.3	Total ..... 3 Percent ... 6.5	Total .... 32 Percent..42.1	Total ..... 8 Percent..10.5

Craftsmen (skilled)	Production Workers (semiskilled)	Physical Labor (unskilled)	Unclassified
	Stitcher 1		No plans .... 7 Return to school .... 5 Former job 4 Housewife ...13
	Total ..... 1 Percent ... 1.3		Total .....29 Percent..38.1

total group, twenty-one or approximately 28 percent of the patients stated that they planned to resume their former occupation. Twenty-four or approximately 19 percent said they had no future plans. Seven or approximately 4 percent were students who planned to return to school. Thirteen or approximately 8 percent were housewives who hoped to go back to their duties at home. These people represent approximately 42 percent of the total group of the 188 patients studied. There were, however, several persons in this group who required vocational assistance. Students who planned to return to school were aided in

planning courses and helped in continuing their school work while in the Sanatorium. Those who had no plans obviously required assistance, and from the number who planned to return to their former work there were several who found that re-training was necessary for physical reasons.

The remainder of this chapter will have to do with a detailed description of the pre-vocational education and the training of individuals in Group II, the training group, and those who are classified as Group III and who have been placed in employment. The purpose is to show how the total adjustment service at Middlesex County Sanatorium functioned in the selection of suitable training and in the ultimate adjustment of the persons who were placed in employment which was consistent with their physical limitations, interests, and abilities, and in which a reasonable amount of happiness, success, and economic security could be expected.

Description of the training group.-- At the time this study was initiated there were nineteen persons who were receiving some type of training. Table 18 shows the patient's occupation before the onset of the disease, what he has stated as his future ambition, and the training he is at present receiving. A series of interviews with the patient involved and consideration of such factors as interests, personal characteristics, occupational opportunity, and physical limitation formed the basis for selection of pre-vocational training. It has been the practice where interest is marked to eliminate testing to any substantial degree. Psychological tests were administered in several instances

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Table 18. Comparison of Previous Occupational Status of 19 Tuberculous Patients with Present Training.

Previous Occupation	Occupational Plans	Present Training
Clerk (office)	Secretarial work	Business training
Salesclerk	Secretarial work	Routine office training
Ward maid	Secretarial work	Secretarial training--Rutland
Student	Secretarial work	Business school
Telephone operator	Secretarial work	Business school
Telephone operator	Secretarial work	Secretarial school
Paste factory	Office work or selling	Receiving training in both
Domestic	Stenography	Secretarial training--Rutland
Student	Stenography	Business training
Student	Stenography	Secretarial training--Rutland
Paper factory	Chemical engineer	At engineering school
Clerk	Civil Service (clerk)	At photography school (com.)
Waitress	Sewing	Learning dressmaking
Attendant	Switchboard operator	General office work--Rutland
Student	Comptometer operator	General office work--Rutland
Newspaper business	Law	Accounting school
No occupation	Drafting	Cabinet making--Rutland
Machine shop	Photography (Clinical)	At photography school
Waitress	Sewing	Learning dressmaking

where the worker doubted the feasibility of the choice of training or where no special interests were defined. In all but one instance, that of a man who expressed an interest in studying law but who changed his plans with the aid of guidance to the study of accounting, the patient's choice was considered feasible.

The choice of clerical work of some type was predominant among the individuals in Group II. In all probability this work is as near ideal for the rehabilitation of tuberculous persons as any type of employment. The field offers a variety of occupations and is not too strenuous physically. Nevertheless the patient is not advised to undertake this work unless he shows a definite interest and has some aptitude

Table 18. Comparison of Previous Occupational Status of 18 Tuberculous Patients with Present Training.

Previous Occupation	Occupational Plans	Present Training
Clerk (office)	Secretarial work	Business training
Salesclerk	Secretarial work	Routine office training
Hard maid	Secretarial work	Secretarial training--Rutland
Student	Secretarial work	Business school
Telephone operator	Secretarial work	Business school
Telephone operator	Secretarial work	Secretarial school
Paste factory	Office work or selling	Receiving training in both
Domestic	Stenography	Secretarial training--Rutland
Student	Stenography	Business training
Student	Stenography	Secretarial training--Rutland
Paper factory	Chemical engineer	At engineering school
Clerk	Civil Service (clerk)	At photography school (com.)
Waitress	Sewing	Learning dressmaking
Attendant	Switchboard operator	General office work--Rutland
Student	Comptometer operator	General office work--Rutland
Newspaper business	Law	Accounting school
No occupation	Drafting	Cabinet making--Rutland
Machine shop	Photography (Clinical)	At photography school
Waitress	Sewing	Learning dressmaking

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for it. The Minnesota Vocational Test for Clerical Workers is quite frequently used to determine the patient's general ability to do routine office work. Reports of the progress of those who are taking commercial training reveal that they are all doing reasonably good work. Several patients have shown exceptional ability. This factor is of interest especially in cases where previous work experience was confined to such occupations as those of ward maid, domestic, and attendant. The two telephone operators were obliged to change their type of work because of the reaching which was required at the switchboard. These young people plan to fit themselves for office work in the telephone company. One young man who worked in a machine shop is doing outstanding work in a school of photography. This had previously been his hobby, and his interest was marked. An unusual case whose history is reviewed in the following chapter is that of a young man who chose drafting but whose mental ability did not warrant the choice. Six patients are at Rutland Training Center where they are receiving training under sheltered conditions.

During the training period monthly reports are received from Rutland giving detailed information as to the general adjustment of the patient and his progress in his work. The rehabilitation worker keeps in close touch with him and frequently visits the Center to encourage and to plan with him a course of procedure when his training is completed. The worker is very careful, however, not to encourage dependency. She assists him but as far as possible tries to have the trainee make his own contacts and find work himself.

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Factors concerned with placement.-- The placement of tuberculous patients, as previously stated, has been definitely facilitated by the defense program which has opened up many employment opportunities previously unavailable. However, there are certain factors and problems with which the worker in the rehabilitation field must contend. One problem which must be faced is the continued prejudice among employers against hiring discharged tuberculous patients. Education has done much to change the attitude of employers, but prejudice still exists among some, and the rehabilitation worker has a definite part in alleviating this sentiment.

Related to this factor is another problem which frequently confronts both the patient and the worker. They are faced with the question of telling the employer of a previous tuberculosis history. A summary statement by Tracy Copp, Regional Agent, Office of Education, Washington, D. C., shows very clearly the feeling on the part of the State and Federal agencies regarding the matter. She states that

> Placement carries with it a responsibility to the respective employer with regard to the health history of the person to be placed. It has always seemed to us that complete frankness is desirable with respect to the disability, the present condition of the case, and the vocational capacity of the disabled person to carry his responsibility in connection with employment. There seems to be little doubt about the responsibility of both the rehabilitation worker and the disabled patient in this regard. Complete frankness concerning the medical history, the health prognosis, and the conditions under which the individual must work and live should characterize all dealings with the employer. Certain conditions which are found in the tuberculous case do not appear in other cases; for example, the person injured by tuberculosis does not reveal his physical infirmity. Frequently he is, after physical restoration has been accomplished, more robust looking than the general run of persons seeking employment. This fact, however, will be revealed when he applies for a job, if, as a

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> condition of employment, a physical examination is necessary. Prejudices against the employment of a person who has had tuberculosis are still prevalent among employers, not only from their own personal standpoint, but because of prejudice among the workers with whom a tuberculous patient person must be associated....In the long time view of the employment prospect of these cases, frankness should characterize our dealings with the cases as well as with the employers.[1]

The trained and placed patient.-- Under the heading "placed" or Group III, twenty patients will be considered. With one exception these individuals are all working full time. They are earning enough to maintain economic security and are reported to be happily situated. One individual is unable at present to accept full-time employment, but is living at home and earning ten dollars a week on a part-time job. Table 19 shows the type of work which these people were doing previous to illness, the expressed occupational plans of each individual when interviewed, and his present employment.

Of the group there are three who merely needed refresher courses and who spent a short time in a secretarial school and later were placed in good positions, similar to those pursued before hospitalization. Again we find a fairly large number who were trained for and are employed in some type of commercial work. One patient was employed for ten years as a starch mixer in a bleachery. He is now successful as a machinist. His case will be summarized in the following chapter. Another case worthy of mention is that of a young man employed on the W.P.A. doing a pick and shovel job. The tuberculosis involvement was serious and the problem a difficult one. His hobby was photography,

1/Tracy Copp, "Federal and State Programs of Vocational Rehabilitation," Reprinted from the Transactions of the Thirty-Fifth Annual Meeting of the National Tuberculosis Association, 1939, pp. 6-7.

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Table 19. Comparison of Previous Employment of 20 Tuberculous Patients in Group III with Present Employment.

Previous Occupation	Occupational Plans	Present Employment
Starch mixer	Machinist	Machinist
Taxi driver	Woodworking	Cabinetmaker
Student	No plans	Woodworker
Student	Stenography	Routine office work
Student	Secretarial work	General office work
Student	Stenography	General office work
Student	Stenography	General office work
Rubber factory	Stenography	General office work
Student	Secretary	General office work
Domestic	No plans	Hairdresser
Waitress	Sewing	Seamstress in family
W.P.A. laborer	Photography	Photographer
Machinist	No plans	Watch worker
Unemployed	Stitcher	Power machine stitcher
Bookkeeper	Same type work	Transferred to another position
Knitter	Same type work	Transferred to another position
Salesclerk	Hairdresser	Beauty shop
Salesman	Replacement	Transferred to another firm
Clerk	Refresher course	Clerical position
Clerk	Refresher course	Clerical position

and throughout his stay in the Sanatorium he displayed a keen interest in the subject. He was eventually helped to secure training and is now successfully employed. A machinist whose work was much too heavy expressed an interest in the use of small tools. The Finger Dexterity and Tweezer Dexterity tests were administered to him and he showed marked ability in the use of his hands. He is now employed in a watch factory. Although in some cases the length of time employed has not been long, no recurrences of the disease have been manifested.

Follow-up.-- The nature and purpose of follow-up in a rehabilitation program is, in the final analysis, to reduce the percentage of

Table 19. Comparison of Previous Employment of 40 Tuberculous Patients in Group III with Present Employment.

Previous Occupation	Occupational Plans	Present Employment
Stereo miner	Machinist	Machinist
Taxi driver	Woodworking	Cabinetmaker
Student	No plans	Woodworker
Student	Stenography	Routine office work
Student	Secretarial work	General office work
Student	Stenography	General office work
Student	Stenography	General office work
Rubber factory	Stenography	General office work
Student	Secretary	General office work
Domestic	No plans	Hairdresser
Waitress	Sewing	Seamstress in family
W.P.A. laborer	Photography	Photographer
Machinist	No plans	Watch worker
Unemployed	Stitcher	Power machine stitcher
Bookkeeper	Same type work	Transferred to another position
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Follow-up.-- The nature and purpose of follow-up in a rehabilitation program is, in the final analysis, to reduce the percentage of

of physical breakdowns and readmittances to the sanatorium. It is, therefore, important to give close attention to the patient while he is pursuing training and after he is employed whether on a full or part-time basis. His physical progress should be determined by periodic medical examinations and X rays and his general adjustment to his work and environment assured.

The rehabilitation worker at the Middlesex County Sanatorium carefully follows each patient in order to make certain that his physical condition and general adjustment to his employment is satisfactory. During the training period a check is made two or three times a month and sometimes oftener. After the patient is placed his progress is noted every month for the first year and after the first year the check-up is made every six months. Patients who are employed are asked to write to the rehabilitation worker and state their progress monthly. Letters are filed with the patient's record. Many of these letters, read by the writer, express not only satisfaction with present employment and gratitude for assistance received, but in many cases a vital change in attitude and general outlook on life is noted. Although the cases which have been placed are not large in number there is reason to feel that as the program expands, more and greater needs will be met, and that human misery and economic waste can be greatly reduced.

The following chapter will illustrate the effectiveness of the limited rehabilitation program now in operation in terms of three selected cases who were beneficiaries of the service.

CHAPTER VIII

SELECTED CASE REPORTS

Although no case history can adequately illustrate the complete application of all the rehabilitation services which are available at Middlesex County Sanatorium, three cases have been chosen for the purpose of indicating to some extent the coordinated program which is serving the patients of the Middlesex County District. The services rendered admittedly were limited in many respects, but the cases described may reveal the value of certain services and the need of a more comprehensive program.

Case I.

Felix W., 33 years of age, of Polish descent, married and with two children ages 6 and 1, was reported to the rehabilitation worker by the W_____ Health Department on May 16, 1941. He was, at this time, looking for work but having little success. His record showed that a diagnosis of minimal tuberculosis was reported by Middlesex County Sanatorium on October 25, 1938, and that he was admitted to this hospital on October 25, 1938. Previous to his admittance he had been a starch mixer at a bleachery and dyeing company, an occupation which involved working conditions highly unsatisfactory to his physical condition.

During his stay in the Sanatorium he was nervous and restless and did not adjust well. On November 9, 1938, before rehabilitation

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During his stay in the Sanatorium he was nervous and restless and did not adjust well. On November 9, 1939, before rehabilitation

services were included in the Middlesex County Sanatorium program, he left the hospital at 6 A.M. and walked to D_____, a distance of 18 miles, because he was worried about his wife and children. The social service worker reported that the family was receiving relief.

Because he was exhibiting at the time extreme nervousness and general instability, arrangements were made by the social worker for the patient to be admitted to a psychopathic hospital for observation. He was released, however, after a few days, and began to look for work. He succeeded in getting odd jobs only. Complaining of some difficulty with his back he was admitted to the Massachusetts General Hospital in January, 1940, where a diagnosis of a tuberculous sinus condition in the lower back was made and the patient was admitted to Lakeville Sanatorium. He remained there six months and was discharged as an arrested case. From the date of discharge to October, 1941, Mr. W. had no full-time employment. He was prohibited from returning to his former occupation because constant standing was required and he was untrained for any other type of employment.

The Middlesex County rehabilitation worker, whose services at the Sanatorium began in August, 1940, called at the home on May 16, 1941, at the time the case was reported to her. Conditions were very poor but the rooms were clean. Mrs. W. looked thin and undernourished and one child was suffering with tuberculous glands. The patient had that day succeeded in getting employment for three days a week. He appeared emotionally upset, saying he could not support his family on the pay he was to receive and that there was inadequate supplementary relief.

He seemed extremely disturbed and told the worker that previous to his illness he had been able to take care of his family without any help. It was the worker's opinion that a mental breakdown was inevitable unless immediate assistance was provided and the patient given some hope for the future.

Mr. W. appeared to possess average intelligence and had graduated from high school. Except for nervousness and apprehension he appeared to have a good personality. His distress seemed genuine to the worker.

A suggestion was made that he might be interested in some type of training. The patient was impressed but again the question of support for his family was introduced. He told the worker, however, that he had always been interested in machinery and felt that if he could be trained there would be work for him in a defense industry. A proposal was made that he investigate local occupations in which he would be interested and report to the rehabilitation worker as soon as he decided on the line of work he wished to pursue.

Within 24 hours the patient appeared at the worker's office. He had spent the day in getting information concerning light machine operation, and reported that he thought Wentworth Institute would give him the training he wanted. The following day the rehabilitation worker contacted the school and found that a three months' summer course was available.

The social worker felt that because of the patient's mental instability there was little chance of success, but agreed to investigate the family situation and arrange for adequate care for his wife and

children if training were undertaken.

Psychological tests were administered to the patient in order to determine his ability and aptitudes for the chosen work. The Pressey Senior Classification Test placed him in the 81 percentile, showing better than average intelligence. His percentile rating on the Minnesota Spacial Relations Test was 98.8. On a tweezer dexterity test he ranked in the 61 percentile and in the 64 percentile on a finger dexterity test. Reasonable success in his chosen field was indicated.

The results were interpreted to the patient. A scholarship of 90 dollars was provided and Mr. W. agreed to make his own arrangements to be admitted to the summer course at the Institute. The worker in the meantime had explained the situation to some extent to those in charge.

Mr. W. began his training in June, 1941. His instruction consisted of bench work in the machine shop, filing and chipping, followed by work on the drill press, lathe, and shaper.

A letter was received by the rehabilitation worker from Mr. W. on July, 1941, stating that he was extremely interested in his work, "that time flew by so quickly he hardly realized that a month had past." He felt that he was progressing and was very hopeful.

On August 29, 1941, a second letter came. Mr. W. was still enthusiastic and reported that his instructor had told him his work was good, and that he would recommend him for a position as soon as he completed training. "It is very interesting work and there is plenty to learn yet. I am very grateful for the opportunity you gave me. We

are on the home stretch now. Three weeks to go. I hope I do not disappoint your association," he wrote.

The worker received a letter on October 6, 1941, in which Mr. W. said, "Through the Institute I have landed a job at the W.H.N. My smallest pay is $27.50 a week. I would have written sooner but I wanted to see the type of a job I could land, the money I would get and whether the doctor would allow me to go to night school."

Mr. W. attempted night school, but had to give it up because of conflicting working hours. In January, 1942, he was given a better job with an increase in pay to $33.00 a week. At this time he moved his family to a larger house in a locality nearer his work. On June 2, 1942, a letter was received from him stating that he had received another raise in pay and that he was now making $54.00 a week. The letter read "This is a good deal more than I have ever made before, but it goes quickly. We have a new baby now, five weeks old. Hospital and doctors bills have been taken care of, thanks to you for putting me in a position to care for these things."

The rehabilitation worker reports that all signs of instability and nervousness have disappeared, and that Mr. W. and his family are very happy. Frequent physical examinations have been made and his condition is reported to be good. The Sanatorium staff feels that Mr. W. is a completely changed person mentally and physically, and that the future looks promising for him.

While the patient's stay in Middlesex County Sanatorium was short, the case illustrates the fact that frequently men with dependents

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Mr. W. attended night school, but had to give it up because of conflicting working hours. In January, 1942, he was given a better job with an increase in pay to $32.00 a week. At this time he moved his family to a larger house in a locality nearer his work. On June 8, 1942, a letter was received from him stating that he had received another raise in pay and that he was now making $36.00 a week. The letter read "This is a good deal more than I have ever made before, but it goes quickly. We have a new baby now, five weeks old. Hospital and doctors bills have been taken care of, thanks to you for putting me in a position to care for these things."

The rehabilitation worker reports that all signs of instability and nervousness have disappeared, and that Mr. W. and his family are very happy. Frequent physical examinations have been made and his condition is reported to be good. The Rehabilitation staff feels that Mr. W. is a completely changed person mentally and physically, and that the future looks promising for him.

While the patient's stay in Middlesex County Sanatorium was short, the case illustrates the fact that frequently men with dependents

do not adjust well to the Sanatorium. It is reasonable to believe that this man's mental difficulty was caused from worry over the fact that his family was not getting adequate care. If there had been a rehabilitation service in the Sanatorium at the time he was a patient, in all probability at least part of his difficulty could have been avoided. He is now, however, taking the entire responsibility for his family and has demonstrated the effectiveness of the vocational training and placement service.

Case II.

Ethel is a young woman 29 years of age. She is of Finnish descent and was employed as a ward maid in a private hospital. The girl's mother is living and works as a cook in a private family. Her father died 14 years ago of tuberculosis. She has one sister living and well, who works as a waitress.

Ethel broke down with tuberculosis in 1935 and was admitted to the C____ Home for the tuberculous. She remained there a year and was discharged to her home apparently an arrested case. At the end of eight months she had a recurrence of the disease and was again admitted to the C___ Home. Her disease did not respond well to bed rest, and she was transferred to Middlesex County Sanatorium where she remained three years. Surgical treatment was found necessary and a three-stage thoracoplasty was performed. Ethel was very ill for a long time and unable to participate in any active program. She was allowed the privilege of reading, and was supplied with books by the librarian who reported that her choice of reading was on a high level and that

she read from the classics as well as good current literature.

Ethel was never at any time an adjustment problem. She was eager to recover and was exceedingly cooperative. During her last year in the Sanatorium her physical condition was sufficiently improved so that one Extension course in English literature was permitted.

This patient was interviewed several times by the rehabilitation worker and was assured that when she was ready for discharge assistance would be given in obtaining training for suitable employment. Her home situation was investigated by the social worker who found that Ethel's mother lived at her place of employment. Her sister also lived away from home. Her case was brought up at the rehabilitation clinic in April, 1941, and after considering various possibilities, this group decided that Ethel would be a good candidate for Rutland Training Center since she had no home to which she could return, and her physical condition would not permit commuting any distance while training.

As the time for discharge drew near Ethel was very much concerned about the future. She told the worker that she would have to earn her own living as soon as treatment was completed. It was impossible for her to go back to the type of work she had done before her illness. She had graduated from high school having taken a general course, appeared very intelligent, and had a very good personality. Several occupations were discussed with her and she stated that she would like to study stenography and learn to run a switchboard. Rutland Training Center was suggested as a place where training in general office work could be secured, and Ethel was interested in receiving her training

there.

A battery of psychological tests was given. Ethel cooperated well and was very much interested in the testing procedure and results. She was given Bell Adjustment Inventory, the Pressey Senior Classification Test, the Revised Alpha Examination and the Minnesota Vocational Test for Clerical Workers. The results of these tests showed average ability. She was later given the Minnesota Spacial Relations Test, finger and tweezer dexterity tests and the Long Range Vocabulary Test. She did very well on tests and in the vocabulary test ranked on the college level. The Bell Adjustment Inventory indicated average adjustment in all areas. Since her scores were high in all these later tests it was felt that because of her deep interest in office work and her high score obtained on the vocabulary section of various tests that she would profit from training in general office work.

In June, 1941, Ethel went to Rutland Training Center. Financial assistance was obtained from the local Christmas Seal Sale Committee. She was allowed only two hours of activity daily during the first month but was gradually increased to five hours. From the beginning this girl was determined to make good. Her work at all times has been exceptional and her social adjustment very satisfactory. She is considered an outstanding student at the Center.

She is now ready for work from the standpoint of training, but needs to remain at the Center until her work tolerance increases so that she can do a full day's work without too much strain. A clerical position is under consideration for her in a tuberculosis institution

where she will receive room and board and approximately 12 dollars a week. This will be an ideal situation for Ethel as she will have no commuting and can be under medical supervision. There will also be a chance for advancement.

This case illustrates the degree to which a patient with advanced tuberculosis can be rehabilitated. Having had a recurrence of the disease, severe surgical treatment, plus a long period of confinement, the probability of a second breakdown would have been likely if Ethel had been allowed to leave the Sanatorium and find work for herself without training. The importance of sheltered training in the rehabilitation program is also shown by this case which could not possibly have stood the strain of commuting to a secretarial school.

Case III.

Ralph is a young Italian boy 23 years of age, small of stature, and somewhat unattractive in appearance although he possesses a likable personality. His mother and sister died of tuberculosis. He was followed closely by the local health department after their death, but eventually broke down with the disease and was admitted to Middlesex County Sanatorium in January, 1938, where he remained for three and one-half years.

He adjusted fairly well to treatment and the Sanatorium, and as soon as he was physically able was encouraged to take Extension courses. He had expressed an interest in becoming a draftsman after discharge and, therefore, chose courses in algebra and drafting. He was interested in occupational therapy and proved very skillful with his

hands. He was also extremely interested in photography as a hobby.

This boy was first interviewed by the rehabilitation worker in February, 1941. He was to be discharged within a few months. He was a bilateral pneumothorax case, requiring medical supervision, and it was necessary to make some arrangement by which he could receive his training under sheltered conditions. His home situation which had been investigated by the social worker was found unsatisfactory. His father, who was 72 years old, lived alone and kept house for himself in a three-room apartment on the third floor of a city tenement. He was supported by old age pension. Transportation to and from the Sanatorium for treatment also was a problem. These factors were all reviewed at the rehabilitation clinic and Rutland Training Center was recommended. At first Ralph refused to consider such an arrangement and held firmly to the idea of becoming a draftsman.

The rehabilitation worker secured Ralph's high school record and found that he had very poor marks in mathematics. Having left school before graduating because of illness, he did not appear to have an educational background sufficient to insure success in the field he chose. Psychological tests were administered which further indicated the advisability of rejecting drafting as an occupation. His spacial relations aptitude was only average and for this type of work it should be superior. Clerical ability was average. His intelligence tests indicated better than average mental ability, and the Wide Range Vocabulary Test indicated a college level vocabulary. Finger and tweezer dexterity tests showed superior ability in the use of his hands.

The test results were carefully interpreted to Ralph who finally, after several interviews, made a second choice, that of cabinet making. The decision was arrived at after great difficulty. He was familiar with this type of work, having come from a long line of cabinetmakers. He was taken to Rutland Training Center for a visit and decided to engage in training in woodworking leading to cabinet making.

Ralph was somewhat of a problem at the Center. He was immature and required a great deal of assistance in finding himself and becoming adjusted. He did reasonably good work but needed almost constant supervision. However, he developed a keen interest in his work and showed continuous improvement. His marks at the Center fluctuated, and his chief difficulty appeared to be an inability to attend to small details. Although his attitude in the main was good he sometimes appeared erratic and unstable. He was helped while at the Center to make a satisfactory adjustment by a psychologist who was at that time a member of the staff. He learned to take responsibility reasonably well, to recognize the importance of small details, and became quite efficient in his work.

Ralph completed his training in April, 1942, and came to the rehabilitation worker for assistance in obtaining employment. Together they made a list of possible woodworking concerns to which he might apply for work. The rehabilitation worker telephoned several companies and made appointments for Ralph, who after several interviews, obtained work in a toy factory at 20 dollars a week. Working conditions were satisfactory.

A letter was received from this boy on May 6, 1942. He is apparently happy in his work and feels that the job he is doing is a stepping stone to greater success.

This case will be carefully followed because of the boy's immaturity and because of his need for encouragement. A quotation from a letter received from Ralph recently in which he expresses his appreciation for the assistance given to him, reads as follows: "You know well that it is difficult to properly thank a person when that person has done a big favor for one. I do hope you will realize that I am sincerely grateful for what you did for me."

This is the case of an immature boy whose education was interrupted and whose vocational plans were not in harmony with tested abilities and aptitudes. The opportunity to learn of undiscovered vocational assets, to engage in a training program to acquire essential skills, and to receive assistance in placement made it possible for another competent worker to take his place in society as a self-supporting, grateful citizen.

CHAPTER IX

CONCLUSIONS AND RECOMMENDATIONS

Summary Statement

This thesis is concerned with the rehabilitation and aftercare of the tuberculous. The problem involves the physical restoration, the mental, emotional, social, and vocational adjustment of the individual. The constant objective of tuberculosis programs has in the past been to prevent the disease by early discovery and segregation, to treat it, and to restore the individual to health. It is now recognized that in addition to medical skill, mental hygiene, social welfare, education and training, and placement are necessary in order to return the patient to a happy and useful life.

The need for rehabilitation services was shown in a study made jointly by the National Tuberculosis Association and the Vocational Rehabilitation Division of the United States Bureau of Education reviewed in Chapter I, in which eight sanatoria in Massachusetts participated. The study indicated among other factors, that about 38 percent of the patients who were discharged from sanatoria left against advice, failing to remain until the cure was complete. It was also shown that 51 percent of all the cases admitted to the hospital were under 30 years of age, and that the death rate in this group is high. Certain deductions were made from the consideration of this study:

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This thesis is concerned with the rehabilitation and aftercare of the tuberculous. The problem involves the physical restoration, the mental, emotional, social, and vocational adjustment of the individual. The constant objective of tuberculosis programs has in the past been to prevent the disease by early discovery and segregation, to treat it, and to restore the individual to health. It is now recognized that in addition to medical skill, mental hygiene, social welfare, education and training, and placement are necessary in order to return the patient to a happy and useful life.

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1. That rehabilitation services should be available to all patients in the sanatorium and particularly those in the younger age group.

2. That adjustment in the sanatorium would probably reduce the number of discharges against advice to a point approaching the irreducible minimum.

3. That scientific educational and vocational guidance is a necessary adjunct to medical treatment and physical cure.

Having established a definite need for rehabilitation in Massachusetts sanatoria, the voluntary tuberculosis associations in accordance with the accepted policy, which is to demonstrate needed services, took the lead in promoting rehabilitation services and in some instances supplied trained workers to initiate the program in the sanatoria.

In two County sanatoria organized programs of rehabilitation have been functioning during the past two years. One of these, the Middlesex County Sanatorium, began its program in August, 1940, when a trained worker was provided by the Southern Middlesex Health Association to coordinate the already existing services of social service, occupational therapy, adult education, and library program, and to supplement this program by adding a counseling and placement service.

In describing this program an effort has been made to show how the medical service can be aided by the social and counseling service in maintaining the morale of the patient while in the sanatorium thus influencing him to remain in the hospital until he has completed his treatment; that the educational service, occupational therapy, and library program can be of inestimable value in mental therapy and

vocational endeavor; and that the vocational guidance and placement service promotes the final adjustment of the patient to an occupation where he may be reasonably secure economically and socially.

No appraisal of the present status of rehabilitation in Massachusetts having been made, it seemed desirable to evaluate what has already been accomplished in a selected institution. The writer has, therefore, chosen for study the present program at the Middlesex County Sanatorium because of the advanced contribution it has already made to the total adjustment of patients handicapped by tuberculosis.

The program which is now functioning in the Middlesex County Sanatorium has been coordinated, and at the present time the social worker, occupational therapist, educational worker, librarian, and rehabilitation worker, each trained in his respective field, are all engaged in the rehabilitation of the patient.

From the total patient population of the Sanatorium, which at the time this study was made, numbered approximately 375, about 40 percent were indicated as reasonably hopeful material for rehabilitation. The basis for the selection was the physical prognosis as determined by the physician. From this group 155 patients whose completed records were available for study were chosen for the purpose of this thesis. The number of cases involved are so limited that no conclusions can be drawn. However, it is felt that the information derived from the study does give essential insights into the problem of rehabilitation and serves to disclose the development of the present program.

In considering the personal factors which influence the total

rehabilitation problem it may be noted: (1) Sixty-three percent of the total group studied were between the ages of 15 and 30 years of age, a period of life when educational and vocational guidance is of especial significance. (2) Although little difference was noted in the sex distribution of the group it is agreed by workers in the field that men present greater difficulty in adjustment to the sanatorium than women, particularly men with dependents. Men are less apt to accept the inactivity required for treatment. (3) Frequently tuberculosis is found among the lower income group although those from higher income levels are not immune. The majority of these patients who were referred to the rehabilitation service were found to need financial assistance in training for employment. (4) Eighteen nationalities were represented in the total group. Approximately 50 percent were of American parentage. Adjustment may be prolonged in foreign born patients when there is a language difficulty, and social adjustment may be difficult.

The stage of the disease whether minimal, moderately advanced, or far advanced, has a bearing on the problem of rehabilitation. While the minimal case is by far the best risk, rehabilitation is possible in some instances for the moderately and far advanced case. The majority of the patients studied were in the moderately advanced stage of the disease. It was also found that 75 percent of the total group studied had some form of treatment other than bed rest. The significance in relation to rehabilitation lies in the fact employment must be more carefully chosen in certain forms of surgery. Frequently

serious types of treatment cause emotional upsets which interfere with recovery.

A study of the basic education of the total group shows the educational mean to be 10.5, limiting the type of training and choice of vocation to some degree. There were approximately 11 percent who did not proceed beyond the elementary grades, approximately 43 percent who completed high school, and approximately 10 percent who spent from one to four years in college.

University Extension courses are offered to patients in tuberculosis hospitals without charge. Approximately 30 percent of the group studied took some course during convalesence. The work is done on an individual basis and the patient is helped to choose a course which will assist him later in training for a specific occupation. The application of guidance techniques which may include psychological tests is highly desirable and has been found effective in helping the patient to decide the type of course he wishes to take. The University Extension courses are supervised by the adult education worker.

The function of guidance in the Sanatorium involves a diagnosis of each patient in terms of aptitudes, interests, abilities, and personality. The combined facilities of the hospital are available to him and some type of pre-vocational training is encouraged. Plans for future training or placement at the time of discharge are formulated as a result of the contribution of each member of the rehabilitation clinic which is composed of the medical director, the patient's physician, the social worker, occupational therapist, librarian, educational

worker, and rehabilitation worker. The rehabilitation worker arranges for training after discharge and secures financial assistance when necessary, and assists the patient to secure suitable employment.

A study of the previous occupations of the group of 155 shows a varied number of capacities and skills. In some instances it was feasible for the patient to return to his former occupation. In most cases, however, re-training was necessary.

There were, at the time this study was made, 19 patients who were receiving some type of training and 20 who had been placed in suitable occupations. A follow-up of these individuals which is systematically carried out shows that there have been no recurrences of the disease and that those who are employed are successful in the work they are now doing.

Three case studies in Chapter VIII illustrate the effectiveness with which the present program is functioning.

It is evident that encouraging progress has been made in the development of educational and vocational guidance for patients in Middlesex County Sanatorium. The value of the present service has been demonstrated and an indication of growth and advancement obvious from the analysis which has been made. The program, however, is still considered in an experimental stage and should be frequently evaluated and appraised and on the basis of patient needs, intelligently interpreted, the services should be expanded in order that adequate and realistic counseling may be provided for all.

Recommendations

Based upon the findings of the total study and in the light of approved rehabilitation practice, certain suggestions which should serve to improve and extend the present services of rehabilitation and aftercare of all patients in the Sanatorium are herewith presented. These suggestions, stated in the form of recommendations, are set forth below:

1. That medical social service be provided for patients in the Sanatorium consistent with that extended to outpatients in the diagnostic clinic. Since the greater part of the social worker's time is required to serve the needs of this clinic it would appear desirable, if possible, to secure an additional trained worker to meet the problems of the patients who are under treatment in the hospital.

2. That occupational therapy service be increased to reach all patients who need and desire it. At present approximately 60 percent of the patients are said to be receiving the benefit of this service. It is recognized that it is impossible for one worker to care for more than this number; therefore in order to reach a greater number of individuals with this invaluable service more than one occupational therapist is needed.

3. That educational services be extended through the use of the internal broadcasting system to include information for patients concerning occupational opportunities, parent education, fundamental information on nutrition and household management, gardening, and other useful and important information.

Recommendations

Based upon the findings of the total study and in the light of approved rehabilitation practice, certain suggestions which should serve to improve and extend the present services of rehabilitation and aftercare of all patients in the Sanatorium are herewith presented. These suggestions, stated in the form of recommendations, are set forth below:

1. That medical social service be provided for patients in the Sanatorium coincident with that extended to outpatients in the dispensary clinic. Since the greater part of the social worker's time is required to serve the needs of this clinic it would appear desirable, if possible, to secure an additional trained worker to meet the problems of the patients who are under treatment in the hospital.

2. That occupational therapy service be increased to reach all patients who need and desire it. At present approximately 60 percent of the patients are said to be receiving the benefit of this service. It is recognized that it is impossible for one worker to care for more than this number; therefore in order to reach a greater number of individuals with this invaluable service more than one occupational therapist is needed.

3. That educational services be extended through the use of the internal broadcasting system to include information for patients concerning occupational opportunities, parent education, fundamental information on nutrition and household management, gardening, and other useful and important information.

4. That further use of psychological tests and inventories be considered for the purpose of obtaining more objective data concerning the patient's adjustment status and his interests, aptitudes, and abilities.

5. That adequate space be provided for a reading room where ambulatory patients may go to select books and to read. A library of occupational materials might well be developed to supplement the present limited material.

6. That the rehabilitation secretary be located in the Sanatorium and that her records be available to all other workers. Such an arrangement would facilitate the coordination of the efforts of the social worker and rehabilitation worker to assist the entering patient in his orientation to the Sanatorium, and alleviate his fears and anxieties through the study of his home conditions and other personal concerns. It also would help the patient to understand the services of the rehabilitation.

7. That the rehabilitation records contain more detailed information concerning the specific nature of the patient's educational background, including vocational training and work experience.

8. That the nurse, frequently a source of valuable information concerning the patient, be included in the rehabilitation conferences.

9. That consideration be given to the patient's avocation to a greater extent since his hobbies or social activities have much to do with his health and have implications for vocational planning.

10. That research be considered when indicated as a method of

determining further needs.

11. That a more concerted effort be made to discover and utilize community resources in the rehabilitation of the individual. Sources of occupational information, financial aid, training for vocational competence, placement services, etc., should be known and utilized.

12. That continued evaluation of the program be made in order to determine the adequacy of the existing program and to recommend necessary changes in procedure and extension of services to the end that the rehabilitation service be adjusted to the ever-changing needs of every patient.

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APPENDIX

Southern Middlesex Health Association Rehabilitation Application Blank

PERSONAL HISTORY

NAME.....2. Color.....3. Sex—M F 4. Birth Date.....

(Maiden Name.....) Place.....

5. Present Address.....How long in County?.....State.....U. S.....

Birthplace of Mother.....Father.....

Previous Addresses.....

6. Marital Status: s. eng. m. w. div. sep. 7. Number of Children.....

Other dependents.....

8. Living arrangements: with family, friends, relatives, or alone.....

9. Names, addresses, and occupations of Mother.....

Father.....

Brothers: 1..... Sisters: 1.....

2..... 2.....

3..... 3.....

4..... 4.....

Husband (Wife).....

10. Names, ages, and present health of family. (List all living in same household.)

NAME	Date of birth	Have or had tuberculosis	Present Health (if tuberculin tested or X-rayed indicate)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

11. Other direct contacts:

1.			
2.			
3.			

12. Financial status: (a) Is applicant self-supporting?.....If not, from whom is relief received?.....

.....(b) Is family self-supporting?.....If not, from whom is relief received?.....

13. Home conditions: (a) No. of rooms.....(b) Does applicant room alone?.....(c) Sleep alone?.....

14. What agencies or persons in community gave any assistance in rehabilitation?

Describe.....

.....

.....

MEDICAL HISTORY

15. Year of onset of disease..... How long in Sanatorium?.....which Sanatorium?.....

.....Discharged with advice?..... Against advice?..... Condition on discharge:..... Treatment in Sanatorium—Bed rest..... Pneumothorax—bilateral..... unilateral..... Temporary....., Permanent.....; Phrenic nerve operation.....; Thoracaplasty—how many stages?.....

16. Date of last examination.....X-ray.....Sputum.....RESULT.....

17. Prognosis as to probable working ability .....

.....

This information is printed on the inside of a manila folder on file for every patient.

EDUCATIONAL AND TRAINING HISTORY

18. Present academic achievement:

Grade completed 1 2 3 4 5 6 7 8 9 10 11 12 College 1 2 3 4 Major.....

Minor.....

Post graduate work? Yes..... No..... Years..... Field.....

Special courses: .....

.....

19. Training in Sanatorium. Yes..... No.....

Course	Time Spent	Agency giving course	Who paid for it?

Why did you take course and did you complete it?.....

.....

20. Training after Discharge: (Vocational or other course)

Course	Time Spent	Agency giving course	Who paid for it?

21. Have you had any job training (a) Before illness..... (b) After illness.....

Occupation..... Time spent.....Employer..... Who paid expenses?.....

22. What languages do you speak?..... Read?.....

OCCUPATIONAL HISTORY

23. ALL Employment before Admittance or Intervals Between Admissions:

Occupation or Industry	Specific Duty	Dates	Hours	Wages	Why Left?

Temporary jobs:

.....

.....

.....

24. Occupational history since discharge including periods of unemployment.

Occupation or Industry	Specific Duty	Dates	Hours	Wages	Why Left?

How long unemployed? From..... To..... From..... To.....

From..... To..... From..... To.....

25. Occupational Ambitions?.....

26. Reason you chose present job, if any?.....

27. List sources applicant has applied to for work recently.....

28. REMARKS:

(Men and Women)

MIDDLESEX COUNTY SANATORIUM
Library Reading Record Form

Name_____
Ward_____ Room_____ Age_____
Occupation_____
Education_____
Pref. _____

Value	READING TOPICS	DISLIKE	INDIFFERENT	CURIOUS	INTERESTED	DEFINITELY LIKE	READING RECORD Date of Woodround Amount Distributed
3.2	Adventure	12%	24%	5%	44%	28%	
0.3	Animal	27%	35%	7%	27%	12%	
1.9	Arts, classics, music, poetry	16%	30%	8%	34%	18%	
0.3	Ancient history	27%	32%	10%	23%	13%	
0.9	Aviation stories	19%	37%	11%	30%	13%	
0.8	Battle stories	27%	28%	6%	22%	18%	
5.3	Best sellers	6%	9%	8%	17%	50%	
2.2	Biography	15%	25%	9%	17%	26%	
0.6	Chemistry, physics, mathematics	31%	25%	10%	25%	11%	
1.0	Child care	21%	31%	10%	26%	14%	
2.2	College stories	18%	36%	12%	12%	14%	
0.5	Comic strips	17%	27%	7%	30%	29%	
1.1	Courtship	22%	32%	17%	26%	11%	
4.4	Crossword puzzles	25%	26%	6%	23%	26%	
4.1	Current events	7%	9%	9%	21%	48%	
1.5	English language	7%	20%	6%	24%	33%	
1.6	Epidemics, floods, earthquakes	16%	26%	21%	24%	14%	
1.5	Ethics, philosophy	21%	26%	16%	36%	15%	
4.0	Etiquette, fashion, cosmetics	25%	22%	5%	26%	28%	
4.3	Facts, information	9%	7%	13%	25%	38%	
-3.2	Fairy stories	59%	25%	5%	36%	5%	
0.3	Food, cleanliness, body building	7%	17%	8%	34%	35%	
-0.1	Foreign language	29%	37%	10%	14%	11%	
-0.3	Fortune telling, magic	51%	28%	10%	15%	3%	
0.3	Geography	11%	27%	12%	16%	17%	
2.3	Government	10%	14%	12%	44%	19%	
0.3	Historical novels	12%	15%	10%	27%	35%	
3.4	Hobbies, recreation	11%	20%	13%	34%	22%	
0.3	Home decoration, budgeting	22%	27%	9%	23%	19%	
2.5	Jobs, occupations	10%	24%	17%	30%	18%	
5.1	Life, Look, etc.	4%	8%	4%	22%	61%	
-0.2	Love stories	37%	23%	7%	17%	16%	
0.5	Love-adventure	28%	26%	11%	17%	18%	
4.2	Magazine digests of non-fiction	9%	10%	6%	25%	50%	
1.1	Marriage	20%	27%	15%	26%	12%	
-0.8	Married women books	35%	31%	13%	12%	9%	
2.1	Mental hygiene	16%	18%	14%	30%	20%	
1.5	Movie magazines	26%	18%	8%	26%	22%	
1.2	Mystery-detective	31%	15%	5%	23%	25%	
5.0	Newspapers	5%	8%	3%	21%	62%	
1.8	Pets	15%	30%	10%	24%	20%	
2.1	Popular science, popular mechanics	16%	25%	9%	24%	24%	
4.0	Public health	8%	16%	10%	36%	30%	
2.6	Sea stories	17%	25%	5%	26%	26%	
2.6	Sport stories	17%	24%	5%	25%	27%	
8.2	Travel books	9%	16%	12%	36%	27%	
8.0	Tuberculosis	19%	7%	16%	34%	24%	
-1.7	Weird stories	50%	19%	9%	14%	9%	
-0.0	Western stories	36%	26%	4%	15%	19%	
1.0	Women's Magazines	31%	20%	3%	16%	29%	

MIDDLESEX COUNTY SANATORIUM
OCCUPATIONAL THERAPY AND EDUCATIONAL SURVEY

Name_____
Ward_____ Room_____ Age_____
Occupation_____
Education_____

Pref. Value	ACTIVITY INTERESTS	DISLIKE	INDIFFERENT	CURIOUS	INTERESTED	DEFINITELY LIKE	PROJECTS KIND AND DATE
6.00	Acting, drama, radio programs	2%	21%	4%	22%	51%	
-.43	Astronomy--knowledge of stars	20%	53%	13%	10%	4%	
2.09	Bead work--bags, tiles, jewelry, bracelets	13%	39%	11%	23%	14%	
1.86	Block-printed greeting cards	9%	49%	11%	24%	7%	
.64	Blueprint reading	16%	49%	11%	16%	8%	
1.72	Book reviewing	13%	45%	10%	21%	11%	
.40	Bookbinding or repair	22%	55%	5%	15%	3%	
1.25	Bookkeeping, accounting	17%	45%	7%	22%	9%	
2.06	Braided silver bracelets	13%	38%	12%	24%	13%	
.23	Clay modeling	18%	50%	12%	15%	5%	
1.58	Copper-tooled bookends, plaques	13%	43%	13%	21%	10%	
1.75	Covers--leather, paper, scrap book folder	15%	42%	8%	24%	11%	
1.45	Crepe paper flowers, party favors	18%	39%	9%	20%	14%	
1.42	Drawing, painting, sketching	13%	48%	9%	16%	14%	
1.92	Dressmaking and designing	18%	40%	2%	19%	21%	
2.53	Embroidery, crocheting, needlework	17%	34%	2%	18%	29%	
3.40	Everyday etiquette	9%	37%	6%	27%	21%	
3.14	First Aid and Home Nursing	10%	37%	6%	22%	24%	
-1.18	Fly making	25%	52%	12%	9%	2%	
3.35	Game making--chess, cribbage	9%	33%	9%	25%	24%	
3.80	Gardening	10%	34%	10%	29%	17%	
-.16	Genealogy	17%	56%	12%	11%	4%	
1.89	Glove making	15%	41%	7%	20%	17%	
1.49	Hat making and designing	19%	43%	7%	18%	13%	
2.20	Household economics & dietetics	13%	40%	8%	23%	16%	
3.31	How to go about getting a job	8%	31%	15%	27%	19%	
3.20	Interior decoration	9%	29%	10%	25%	27%	
3.29	Knitting	13%	34%	4%	16%	33%	
2.67	Knotted belts and bags	12%	36%	9%	22%	21%	
3.04	Leather-laced novelties	10%	35%	10%	26%	19%	
2.91	Leather-link, work-bags, belts, suspenders	9%	38%	11%	24%	18%	
3.21	Letter writing and composition	10%	36%	7%	29%	19%	
2.03	Library service, switchboard or laboratory	12%	41%	11%	19%	17%	
-.40	Mechanical drawing	27%	42%	9%	13%	9%	
-.30	Model airplanes	23%	50%	8%	15%	4%	
.84	Molded pewter and silver dishes	18%	43%	11%	16%	12%	
4.40	Music (victrola records)	7%	30%	6%	24%	33%	
.67	Necktie making	18%	46%	11%	18%	7%	
3.01	Photography	9%	33%	14%	26%	18%	
1.48	Picture framing	13%	45%	12%	20%	10%	
.44	Printing	16%	49%	14%	14%	7%	
-1.35	Puppets and marionette making	28%	50%	9%	11%	2%	
2.70	Puzzles and games	10%	36%	13%	27%	14%	
1.38	Rake-knitted scarfs and berets	17%	12%	8%	18%	15%	
2.20	Rugs--hooked, braided, yarn	15%	41%	4%	24%	16%	
2.50	Sandal and moscaain making	13%	37%	9%	25%	16%	
.74	Salesmanship	20%	44%	7%	18%	11%	
1.82	Scrap books	14%	43%	8%	23%	12%	
1.96	Shorthand	15%	43%	4%	24%	14%	
.81	Silhouettes	15%	50%	11%	16%	8%	
2.98	Typing	12%	34%	7%	23%	24%	
3.75	Vocabulary building	11%	29%	5%	30%	25%	
2.03	Weave-it afghans, scarfs, etc.	16%	36%	8%	23%	17%	
1.52	Weaving	18%	37%	10%	21%	14%	
-.27	Whittling	23%	46%	10%	16%	5%	
2.03	Wire bracelets, pins, clips	15%	38%	9%	24%	14%	
.33	Woodworking and chip carving	20%	46%	10%	12%	12%	
1.21	Writing--stories, plays, etc.	19%	43%	5%	16%	17%	